American Journal of Public Health
and THE NATION'S HEALTH

Volume 40 February, 1950 Number 2

Mental Health Principles in the State and Local Health Program: A Commonwealth Fund Demonstration*

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NEITHER public health nor mental hygiene is a new subject. As early as 1794 a Dr. H. Rose in Philadelphia printed an essay on mental health. Since about 1844 there has been an increasing interest in mental health among professional and lay groups, both on a national and local level. In more recent years, legislative assistance has greatly promoted interest and action in this field. Public health, too, has developed over a long period of time into our current concept of preventive medicine. While I have nothing original to contribute to basic concepts, I would like to present for your consideration a new viewpoint offered recently in two Commonwealth Fund demonstrations. Before I describe the theories and techniques involved in these experiments, perhaps we should consider whether or not the bases on which they were arranged, are sound.

First, let us ask ourselves what mental hygiene *is*. It is difficult to define. We may say that it is an aggregate of measures designed to preserve mental health.[1] What, then, is mental health? I like the explanation that Dr. A. R. Mangus gave recently to a group of nurses: "The ability to live up to a high level of one's capacities. . . . in reasonable accordance with the reality of situations as viewed by others, and to meet the ordinary stresses of life without developing crippling or limiting symptoms . . .; to make decisions and assume responsibilities appropriate to one's age."[2]

Mental hygiene is not limited to an academic interest in the description and causes of maladjustive behavior. It is vitally concerned with ***prevention***—prevention used in the broad sense: in establishing conditions to further normal emotional life, and the treatment of minor behavior disorders so that serious illness may be avoided. It is not a

* Presented before a Joint Session of the Health Officers, Public Health Education, and School Health Sections of the A.P.H.A., and the American School Health Association in coöperation with the National Committee for Mental Hygiene at the Seventy-seventh Annual Meeting of the American Public Health Association in New York, N. Y., October 26, 1949.

narrow specialty; it involves all phases of life. We are realizing gradually that there are reasons within the individual which account for unusual or antisocial conduct or self-destructive behavior. People do things in response to some inner need, in a way to get temporary or partial satisfaction. Mental hygiene practices have a twofold purpose in this situation: (1) to prevent mental disease through an organized public health movement, and (2) to teach people how to accept themselves as they are—to get the most from life.

Obviously, mental illness presents a social problem of major significance. Psychiatric treatment in hospitals is a problem of medical care which our health departments are not equipped to handle, but neurotic disabilities, character disorders, psychotic manifestations, maladjustments and behavior disturbances are costly; their treatment is time-consuming, and the results in human distress are devastating. It is imperative that programs not be limited to treatment of these far advanced cases, but that they be concerned with effective prevention of mental illness and active promotion of mental and social health. Public health —"the art and science of preventing disease, prolonging life, and promoting physical and mental efficiency through organized community effort"[3]—will fall short of its goal if we fail to recognize and acknowledge our responsibility in mental health.

Since its inception public health has been progressive, changing to meet new needs as they arise. At present we are interested not only in reducing the number of deaths, but in promoting maximum health described by the World Health Organization as "a state of complete physical, mental, and social well-being, not merely the absence of disease or infirmity."[4] This implies increased interest in the individual, and consideration of psychiatric factors as a cause of morbidity. Thus we see that mental hygiene and public health practices cannot be separated; each is a part of the other.

A number of approaches to meeting the problems in mental health have been suggested. Voluntary groups on local, state, national, and international levels have organized to combat mental illness. Legislative action has provided funds for training, research, and grants-in-aid to states, to assist them in establishing and improving mental health services in their communities. Colleges and universities are putting more emphasis on mental hygiene, the social sciences, and psychiatric principles and techniques. Social work agencies have long been leaders in recognizing the implications of the individual and his relation to his environment. Psychiatrists are teaching the value of preventive measures as well as individual therapy. Not only professional publications, but popular journals and magazines are stimulating lay interest in emotional and personality adjustments. State programs vary in their approach and activity: some offer specialized clinics for both children and adults; others limit their clinic services to young children and the teen-age group. In some states the health departments have been delegated, or have assumed full responsibility for the mental health program; in others, there is joint responsibility and coöperative functioning of two or more agencies. In still others, there are independent and divergent programs carried on by the health department, other official agencies and voluntary agencies. In almost every instance, service has been aimed at psychiatric treatment and guidance on an intensive and highly technical level. Selection of patients has been according to intensity of need for psychotherapy, and has of necessity resulted in the exclusion of many individuals with emotional disturbances. The universal cry has been, "Too many

patients and too few trained workers." It is this feeling of present inadequacy in meeting the entire problem of mental hygiene that has stimulated the thinking and planning of a new line of approach—an approach not intended to supplant or change in any way the splendid services already planned or inaugurated, but an approach designed to reach those individuals who have at present no source for relief of their mentally disturbed state or assistance in a solution of their problems.

This leads to the crux of our discussion: practical demonstrations of ways in which mental hygiene ideas can be applied in public health services. Two institutes, of 2 weeks each, have been sponsored by The Commonwealth Fund of New York—one at Berkeley, Calif., in the summer of 1948, and one on the Mississippi Gulf Coast in the spring of 1949. Since both demonstrations incorporated the same basic principles, I feel that a description of only one will paint for you an adequate word picture.

The purpose of the institute on the Mississippi Gulf Coast was to demonstrate how mental health concepts, principles, and practices can and should be integrated into the public health program. Twenty-eight health officers and 4 nurses from 5 states and the Dominion of Canada participated on a student basis; there were 4 observers, 2 nurse consultants, and 1 administrative and 2 clerical assistants. The students were divided into four sections of 1 nurse and 7 health officers, with 2 psychiatrists and a public health representative acting as instructors in each section.

Two days prior to the workshop the faculty met for planning and for orientation of non-public-health personnel. Public health programs of the area were described and an attempt was made to convey the public health point of view.

The first night of the institute a seafood jamboree served as an "ice-breaker." The group of 54 became quite informal and developed an easy relationship that was to characterize the entire meeting. Another factor which contributed to easy friendliness and group participation was the rooming arrangement: room mates were assigned so that no two people knowing each other previously, were placed together. This tended to lessen the formation of cliques, and accelerated a group setting.

Each morning there was a lecture by one of the psychiatrists, followed by group discussion. Subjects covered included Growth and Development, Anxiety, Adaptability in the Adult, Group Phenomena, Dependency, Hostility, Authority, Problems of Administration, and Health Education. Immediately after the lecture two sections continued separately with discussions centered around the morning's subject, while the other two groups interviewed patients in the clinics and attended conferences held in the coast health departments. In the afternoon the two groups who had class during the morning interviewed in clinic, while the two groups who had attended clinic in the morning discussed their findings. By this arrangement each student had a lecture, a clinic experience, and a discussion period each day.

The clinics were regularly scheduled sessions held in the health departments. Applying knowledge gained from lectures and group work, the students under supervision of the instructors, tried through interview techniques to discover emotional problems, or potential emotional problems, present in the patients attending clinic for any reason, and, when possible, to help with their solution. Some interviews were on an individual basis, some were conducted by groups of 4 students and an instructor. Following clinic interviews, individual students summarized their findings and were helped by the instructors to interpret them, and to

work out possible solutions for problems.

Five evening meetings were scheduled for films and panel discussions. Students were free on other evenings to arrange entertainment as they desired. Each afternoon at 5, open house was held in one of the hotel parlors, and inevitably, conversation centered around the day's proceedings. One evening a rather unusual panel discussion was presented. Five discussants assumed the roles of county commissioner, local health officer, sanitation supervisor, public health nurse, and hospital administrator, and met to decide how to handle a family situation which had become a public health problem. Organization and utilization of community resources, and application of mental hygiene concepts were brought out.

The last afternoon of the meeting was held open for whatever activity each group chose. Specific cases whom the interviewers wanted to follow were asked to return to the health department and were seen again. Some of the psychiatrists chose to make home visits with the local staff nurses, later commenting that the nurses, whether consciously or not, were already practising good mental hygiene with their patients.

On the final morning of the workshop, group leaders summarized the 2 weeks' work, inviting general discussion. One speaker reviewed the consideration of interpersonal relationships, pointing out the need for wholesome attitudes within the health department staff as well as between health personnel and the people they serve. Another summarized methods of applying mental health principles in the total public health program. A third enumerated the new concepts given by health workers to the psychiatrists, and a fourth summarized organization of the health program to include psychiatric practices as an integral part. Students were asked to submit comments, criticism, and suggestions concerning the institute and their reactions to the proposals made there.

It was both interesting and amusing to observe the changing attitudes of those participating in the institute. Most of them came feeling that they were going to sit through hours of technical lectures in psychiatry. Some resented the idea that someone was trying to make psychiatrists of them in 2 weeks; others openly stated that public health officials are not trained in mental diseases, and have no business tampering with anything so volatile. Belligerence, resentment, and defensive attitudes of the first couple of days, replaced by confused thinking and indecisions during the next day or two, changed not only into receptiveness to the discussions, but active participation early in the second week. I believe that every public health worker went away determined to incorporate mental hygiene practices into his everyday routine interviewing and clinic work, and that every person in the field of psychiatry left convinced that public health can, and will, contribute to the prevention of many mental disorders.

It would be hard to determine any one major factor contributing to the success of such a demonstration. Certainly the lectures were interesting, instructive, and applicable to our public health program. But with these lectures alone, I am afraid that the concept of applying mental hygiene principles to one's everyday work would have been difficult to grasp. The discussions were of general interest and stimulated the exchange of many worth while ideas, but if the institute had been composed of discussion groups alone, I am afraid that all would have gone away feeling that we had attended just one more gathering of public health workers. One unusual feature of the institute was the participation in clinic sessions. The student was placed in a setting that was perfectly familiar, so that it was not

difficult for the health officer and the nurse to imagine that they were working in one of their own clinics and, with the aid of sympathetic and expert psychiatrists, were rendering a more complete health service to the patients coming to their own health department. In this situation, means of integrating mental hygiene into the public health program were presented realistically.

Perhaps the most outstanding experience of the institute was that of getting on comfortable terms with psychiatry and psychiatrists. There was no "ivory tower." The easy give and take during clinics, in discussion groups, and in after-class bull sessions, marked the sincerity of purpose of both instructor and student. It was surprising how nearly parallel ran the aims of the psychiatrist and the public health worker toward the practice of preventive medicine.

While it would not be practical to propose that such an elaborate institute be a continuing experience in any area, the principles learned there can be woven into our health program. Reports from our neighboring states indicate that progress is being made in this direction. One state represented at the institute has conducted a 5 day demonstration workshop with the first 4 days directed to health officers and institutional and public health nurses, the 5th day, to mental health clinic personnel. This same state has arranged nursing study groups in three local health departments. Another of our neighbors reports an interesting institute on the coöperative application of mental health principles in programs of community agencies, with more intensive effort, particularly, among school personnel. A third group represented has arranged a short graduate course in psychiatry for the general practitioner. Other states taking part in the institute are promoting follow-up in various ways.

To make practical applications possible in our own (Mississippi) program, we are attempting to give more of our personnel "the mental health idea"—to help them become aware of the problem and their responsibility in it. Our Division of Health Education and the psychiatrist of the State Board of Health are selecting and obtaining for us, printed material and films to use with the staff, as well as for the staff to use with patients; consultant service has been requested from the U. S. Public Health Service; local psychiatrists in private practice will be asked to contribute to our staff education program; some of our hospitals are arranging to include psychiatric nursing in basic nursing education; speakers have already been invited to talk to us about mental health at our annual state public health meeting in December; scholarships are available for health officers and nurses who are interested in graduate work in this field. Two of our northern counties have arranged for inservice training through University of Tennessee extension work, sponsored by the Tennessee Medical Association.

In addition to three workshops for parents, promoted jointly by the Health Department and the Department of Education, we have had the Public Health Service regional mental hygiene consultant for one day's discussion with supervising nurses from local and state levels. Plans are now being worked out for 3 day regional institutes, at which mental hygiene concepts and principles will be interpreted not only to health officers and nurses, but to all members of local staffs. Personnel have been asked to watch for, and summarize for use at the institutes, actual mental health problems which they observe in their day-by-day service to the public.

The Mississippi institute had in attendance from several southern states, health officers whose responsibilities were in both the administrative and clinical field. Certainly, both the public health administrator and the public

health clinician are in need of experience in the art of practising mental hygiene or interpersonal relationships. The public health nurses who were in attendance at the Mississippi institute added greatly to the success of the experience. The public health nurse visiting in the home, giving the people she serves an opportunity to talk things out, imparting knowledge in terms of their environment and understanding, and using her experience as a nurse to be a helpful human being and a skilled friend to people, will be the ultimate effecter of any mental health program that actually reaches the masses of people.

Some of you are questioning the practicability of this plan of making each public health worker a mental health emissary. Others of you are asking, "But what can you do when you find mental disorders? Your treatment facilities are meager." Some of you are thinking that untrained workers have no place in such a program. To answer your question in part, let us think for a moment about the application of mental hygiene concepts in the actual services of our generalized program.

Immunization in communicable disease control is a relatively non-personal procedure. But suppose the members of the staff know something of the reasons for irrational behavior, and are conscious that they are dealing with people whose feelings must be considered; the procedure then becomes an opportunity to show that the health department is interested not only in syringes and needles and sterilization, but in the person requesting service.

The uninformed receptionist, special investigator, or technician may by his or her own reactions, develop feelings of guilt or fear in the venereal disease patient. But suppose they extend to him understanding and scientific knowledge. Will this not tend to reduce reinfection?

Because of our own lack of security and understanding, we are often prone to stamp the tuberculosis patient as uncoöperative. Suppose that we better understood that the patient is not only physically ill, but emotionally disturbed —afraid of being ostracized by family and community, fearful for the economic status of his family, wondering what he has done, or failed to do, to bring on his condition, afraid of dying, depressed— perhaps we might then recognize tuberculosis control as one of our biggest fields for the prevention of emotional and personality disturbances.

Suppose an expectant mother, afraid of marking her baby, comes for the first time to a health department in which the staff has not been oriented in mental health. We can imagine her approaching the receptionist who sits at her desk, looking bored with life in general and with expectant mothers in particular. Asking to see the doctor, the woman is told that he is busy, but she can wait in the lobby. After a lengthy wait she sees the doctor who, rushed and a bit tired, examines her hurriedly, says she is in fine condition, and sends her, production line fashion, on her way. Compare this picture with that of a staff alert to symptoms of tension and frustration—able to accept and handle them with genuine sympathy, practical suggestions, and needed support which very possibly forestall later parent-child conflicts, and increase a sense of personal security.

Suppose teachers and health workers in school service had better understanding not only of why the children behave as they do, but why they themselves behave as they do—would not a double service be rendered?

Food handlers in clinics, the chronically ill, the cancer victims, the typhoid fever carriers, and all of the others whom we serve, present potential mental disorders. For too long we have been primarily interested in their physical

well-being. We must now see them as *people*—individuals with families, living in social situations. And because mental health—or mental illness—has meaning only in relation to social situations, health—total health—is affected by our social conditions.

Public health alone cannot assure every person of proper harmony and balance, or of basic conditions for personal adjustment. But public health, in coöperation with other agencies and professions, can practise concepts of mental hygiene that will foster "living to a high level of one's capacities, meeting ordinary stresses of life, and making decisions and assuming responsibilities appropriate to one's age."

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Argentina Offers Public Health Fellowships

The Ministry of Public Health of the Republic of Argentina has announced that there will be offered annually up to twenty fellowships for professional foreigners who wish to perfect their knowledge of sanitation in Argentina and who will be able on their return to apply themselves to this work. Fellowships are of one year duration and may be renewed. They consist of travel expense in addition to a monthly allowance of 1,000 pesos. Command of the Spanish language is necessary. The selection of the candidates will be made according to their personal qualifications and to the importance of the work they have to perform in their own country.

Persons wishing further information should apply for the official application blanks through the Educational Programs Branch, Division of International Health, U S. Public Health Service, Washington, D. C.

A Health Department Increases the Awareness of Its Staff for Mental Hygiene*

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IN the pursuit of health in its fulness, public health and its workers are turning to new fields, and one of the most important problems is promotion of mental health which at the same time is a field of endeavor to which the public health worker has been surprisingly aloof.

Just what is the scope of application of public health practices to mental hygiene? That is a question which is very difficult to answer. Many of the epidemiological principles utilized in the control of communicable diseases have been applied to promotion of mental health. We know the relative incidence of mental disease—at least we know that more than half the hospital beds in this country are today filled with mental patients. We know the age, sex, and race incidence of this disease, but we know little about actual causes.

In order to bring about the most effective methods of control and prevention of disease, we must know the etiological agents and the means by which these etiological agents may be brought under control; and although the causes of mental disease are not completely known, many contributing factors have been definitely recognized. The modern psychiatrist, thinking in terms of prevention of mental illness, is concerned with control measures which will eliminate such contributing factors. This is the first approach to prevention of mental disease; and it is believed by many public health workers and by psychiatrists who are public health minded, that what may be done in this field can be productive in time of unbelievably good results.

Some two years ago, exploratory talks were held in Detroit between Dr. Joseph Molner, then Deputy Commissioner of Health of the City of Detroit (now commissioner), and myself as to the introduction into the Detroit Department of Health of preventive psychiatry or mental health. These talks led to a conference with the late Dr. Bruce Douglas, then Commissioner. He approved, and we began to plan for action. It was felt that it would be better to begin rather modestly and build upon a sound foundation. It seemed to us that first priority should go to indoctrination of "key" personnel, for, unless they were "sold," the project would not go forward with any degree of enthusiasm and might even be sabotaged through their inertia. Therefore, for the first year, I met for one morning, nearly weekly, with the Chief of the Nursing Division and her staff of supervisors for the purpose of conducting seminars on the subject. It was felt best to begin work with the nurses because they, more than any

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other personnel in the department, met and dealt daily with everyday problems of people. The response was little short of overwhelming, and the real warmth and enthusiasm of Grace Ross, Director of Nursing and her staff of supervisors was the greatest reward one could imagine. Out of these seminars came a conviction that we were "on the right track"; a "steering committee" was formed, and it was decided to attempt to work with the entire staff of nurses for the second year's program. In essence, we continued with seminars for all the nurses, again, nearly weekly, one morning a week.

The Group for the Advancement of Psychiatry and the Committee on Preventive Psychiatry of that body (of which the writer was a member) soon found that we needed help from other disciplines than psychiatry, and we enlisted consultants from various other fields. We found that mental health, other than organically determined, really is determined in early infancy and childhood, and is even influenced by prenatal factors. Actually, prevention of mental illness begins before the birth of the individual. But, there is a wide gulf between the knowledge of a small group of specialists who have spent a tremendous amount of time and effort on the problem and the knowledge of those persons who come into close relationships every day with large numbers of people—mothers, fathers, sisters and brothers, teachers, club workers, coaches of school teams, etc., who are really in a position to exert tremendous influence upon the daily lives of those children whose mental health we wish to affect favorably. Clearly, the first job is one of the education. There is no "royal road."

Obviously, in the Detroit Health Department our nurses are the people who are professionally interested in problems of health concerning our citizens. They see them every day in our schools, hospitals, prenatal clinics, health centers, etc. If we are to bring our knowledge to bear on the problem, our nurses must be carefully indoctrinated and must themselves learn that part of our growing body of knowledge which is concerned with prevention. Notice that I avoid talking of treatment. There never will be in the foreseeable future, in my opinion, enough trained professional people—and I mean doctors of medicine who are also trained psychiatrists, to do the job. If we are to accomplish in preventive psychiatry what we have accomplished in, for instance, the prevention of diphtheria or smallpox, we must find a means of immunizing children from emotional stresses which will bring about mental illness if not avoided. But there is no injection, no serum, no attenuated virus to employ. Our job is, by comparison, immensely more complicated, tremendously more exacting. We must, in effect, alter in large measure the mores, the behavior, and the philosophy of millions of people. And, I submit, that in these days of atomic weapons, if we do *not* find a means to effect changes in people's emotional health, we shall have no world to live in. For, wars begin, not, as the preamble to the constitution of UNESCO has it, in the minds of men, but rather, in the neglect of the needs of the children, later the men who begin wars. I am not statistician or epidemiologist enough to know what percentage of people must change their methods of living, their methods of child care, their interpersonal relations to bring about the change needed, but it must be a tremendous number, and hence we must bend every effort to help parents, teachers, nurses, etc., to understand how to better the mental health of our children.

In teaching our nurses, we begin with the personalities of the parents of children, we trace the development of the child from birth to maturity, and study what things are of greatest importance

in the mental health of those children. As Louis Berg has put it, "Man is not born human, but rather, struggles all his life to become so." Thereby hangs my tale. The child is not born with a code of conduct, a knowledge of the rules by which we live, but rather, has them forced upon him against his will.

Consider, if you will, the tremendous changes forced upon the baby with birth. For nine months he has grown in a quiet, warm, dark place all his own, and he has not had to do a thing for himself. His nourishment was automatic. He didn't even need to breathe! But with his birth what a change in things! He is forced, willy-nilly, through a hard, bony canal which is barely large enough for him to pass through, and then he is shoved into a noisy, glaringly bright, cold world where he must immediately begin the work of breathing in order to continue living. Small wonder that the first thing he does is cry! And if he doesn't, chances are that he will get spanked by the accoucheur until he does cry. Then the struggle is on! Often he won't get fed when he's hungry, because that isn't the way modern homes are run. He gets fed when the clock says he will and not before. If he cries, he cries—that's all. This brings us to a consideration of what we have come to regard as the first rule of mental health. We have come to believe, and again, let me remind you that we have confirmed this with thousands of observations, that the first need of the child in his quest for health is for security in feeding. In my opinion, the best food for a baby is the natural food, and that is mother's breast milk, obtained in the good old-fashioned way of suckling at the mother's breast, when the baby is hungry, when the hunger contractions and flow of digestive juices are physiologically ready for food, and not when the child has exhausted himself crying and the hunger contractions have worn themselves out, waiting for the clock to tell the maid that it's time to warm up what the pediatrician hopes is the right amount of what he hopes is the right formula.

If we bring babies into the world without their say-so, the least we can do is feed them when they need food, and not just when we are ready to stop our mad rush to give them a poor substitute. For, it is not alone important that the infant get nourishment, but, from the mental hygiene standpoint, it is quite as important that the infant not suffer frustration of the instinct of hunger, for we have found that satisfaction of this instinct with reasonable alacrity does a very great deal to give a baby security and to prevent the development of a future neurotic or psychotic. I might cite Moloney's work on this subject with the Okinawans, observations in the Merrill-Palmer School, etc.

Further, a basic need of the child in early infancy is that of love. You have heard, I am sure of T.L.C.—tender loving care. It is often—too often—said in jest. But it is certain that babies *do* need love. They need to be loved, in order for them to learn to love—as we psychiatrists say—to relate to others with warmth. Dr. Gregory Zilboorg, in speaking at the Michigan Society for Mental Hygiene annual luncheon meeting, gave a most interesting talk on "The Magic of the Death of a Salesman." He pointed out that apparently no one in the play loves except Linda—that her husband, Willie, really did not love and did not teach their children to love, but rather, only "to get by." Dr. Zilboorg went on to point out that when Willie finds that he is not loved he cannot tolerate it, and commits suicide. Our culture and mores today teach us to make money, "to get by," look like a "big shot." But, as any psychiatrist can tell you—the appearance of success is no guarantee of health and happiness. Of course, I do not wish anyone to think that I suggest poverty as a cure. I do

suggest that a world in which there was more love than hate would come much closer to curing, and would render superfluous the "A-bomb," bacterial warfare, chemical warfare, etc., for there would be no war in such a world. I realize that it may be entirely naive to suggest now just about the same thing Christ did nearly two thousand years ago. But, there is this difference—science has been able to find scientific support for certain of Christianity's teachings, and you can be religious or irreligious, agnostic, or what you will, but, in relationship with infants and children you will behave in its spirit if you wish to raise children in the manner which promises to give them the best chance for a mentally healthy life on earth.

It is often said, by those people who fundamentally are too narcissistic or, in plain words, too selfish, to give the infant the care and attention and love which he needs for a good start in life, that what we suggest is tantamount to slavery for the mothers and to a lesser degree, the fathers. This is not so. The best example of which I have personal knowledge is that of a couple of my friends who have now raised babies by both methods. The last baby, raised by the technique of what we call demand feeding, set her own schedule, and they found to their amazement and delight that, unlike the first two babies, fed by the clock-bottle-formula, she did not awaken the household for the 4 A.M. feeding, and instead, slept right through until morning!

We teach in our program in Detroit that the next important factor is toilet training. Despite the fact that, so far as I know, all medical schools teach neuro-anatomy, many doctors seem to forget or, at least, do not make it plain to mothers, that babies are not born with their nervous systems completely developed. We know that actually, the baby is not able, without danger to his mental-emotional welfare, to control his excretory functions until between 15 and 18 months. Note that I say, "not without danger to his mental-emotional welfare." It is true that he can be forced to toilet-train sooner, but always with danger—always at a price, and the price is lessened security—lessened ability to withstand frustration and tensions. This is an old story to child psychiatrists who well know the child who was toilet trained too early by a mother who took pride in that accomplishment, but which child had to be treated later for stuttering, for phobias, etc. We now know that toilet training must not be rushed, but that the mother should, rather, be patient and, as it is said, optimistically expectant. This does not mean that no attempt should be made to develop regularity but that the child should be encouraged, not coerced, not seduced, not forced into sphincter control too early. Nor should the child be given the impression that the mother is too concerned with his excretory productions, for if this is the case, the child either uses this as a weapon against the mother or else, when wishing to earn mother's approval, will develop other symptoms by trying to produce without physiological need—in other words, out of psychological need. I could, if time permitted, tell you of the case of the woman who had, in later life, developed a dysentery for which she had been treated in various clinics in the country, but which dysentery was found to be not organic, but psychological—she was unconsciously repeating her biography and was trying to "please mother" with her prodigious output of feces.

Since time is fast running out, I shall attempt to present a rather briefer summary of the further outline which we presented to our nurses. Of great importance in understanding the normal development of the personality is the so-called family romance. By this is meant the simple fact that the child first loves mother. This is only what one

would expect, for mother is the first one in the world who concerns herself with caring for the infant and satisfying his or her needs. In passing, perhaps it should be mentioned that the baby first regards the mother as a part of himself, or an extension of himself. Of course, with the defining of ego boundaries, the child learns what is him and what is his environment.

Then, mother is the love object of the child's libido. But, sooner or later, the child learns that another person—a giant—seems to have a prior claim on mother; namely, father. Now, with respect to these grownups, the story differs a little from here on—the boy continues to court mother (and everyone here knows that the little boy sometime proposes to mother), but the little girl around 3 begins to transfer love to the father—he is the first man in her life. Here the idea of how super-ego, or conscience, is developed.

We all have observed that the infant is not born with such a self-governor, but gradually must learn what is "right," and what is "wrong." Courts acknowledge this fact, in that the law does not hold a child responsible. It is when the child finally recognizes that the parent of the opposite sex must be given up as a love object that the super-ego receives its greatest impetus to develop. Then comes the so-called "latent" phase of childhood, which continues until puberty and adolescence when the child now has a second chance, so to speak, to resolve the oedipus complex, or the love for the parent of the opposite sex, and transfer the love to another person of the opposite sex, and so-called "puppy love" enters the picture. Many times, the child has so much difficulty, unconsciously, in giving up the parent that the loved one must be "Like" the parent. Indeed, we have a song which says it—"I want a girl just like the girl that married dear old dad."

We still have not touched on prenatal influences as dealt with in prenatal clinics. We have not talked about environmental factors which certainly play a great part in mental health. Such everyday problems as proper housing, for instance, are of the greatest importance for many people. I have had to treat many people in my practice for mental disorders or emotional illnesses due to overcrowded living conditions. It is an old story that "there is no house big enough for two families." There is no question but what racial, religious, and other group tension-producing relations are of tremendous importance in mental health. We have to deal also with the influence of poorly adjusted teachers, parents, and others in the community. We could spend time on the problems posed by playgrounds, or their lack, or their poor supervision.

I should be remiss, if before closing this paper, I did not say that, in my opinion, no health department in America can regard itself as doing a real job if it does not have a section or division or branch of mental health. It is not enough to increase the awareness of the health department in regard to mental health. There should be, there must be, an integrated mental health section, where a planned program for preventive psychiatry can be provided to the community, and to which all members of the health department staff and others in the community can come for authoritative advice, counsel and encouragement.

Nature of Mental Health Programs in Health and Educational Agencies Under the National Mental Health Act—The Role of a Consultant*

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RECENTLY I had occasion to overhear a bit of conversation between members of a group of state health people. Said one, "I'm fed up with consultants; they are nothing but special irritants!" And so they well can be, particularly if two important facts are overlooked. The first relates to the definition of the term "consultation." The dictionary defines it as a meeting for conference. And, to confer, suggests the interchange of counsel, advice, or information. The consultant, then, is one who confers *with,* that is, who discusses something with, another and compares views. The second fact to remember is that the consultant starts at the point in thought and action at which the person, the system, or the community has arrived. Obfuscation rather than enlightenment results if this be not kept in mind. Nothing will more readily make the consultant *de trop* than a failure to recognize these two important facts and to act in accordance with them.

Mental health activities were not unknown in health and educational agencies previous to the passage of the National Mental Health Act. But they were limited and not always well planned. Pressure from some source often led to the initiation of some activity, but its full measure and value was rarely realized. I have in mind the child guidance clinic. Schools, courts, and parents wanted a facility which would care for the problem case. The lessons to be learned from the "casual breakdown" were overlooked, and hence those factors and conditions in the school, community, or home, which were basic to the behavior disturbance received little attention, particularly in so far as they might be affecting the well-being of many others who might conceivably also fall victims. The reasons for this are quite apparent. The lack of community understanding, and the physician's, the psychiatrist's well known interest in the individual case are paramount factors. To realize its inherent values the child guidance clinic must become more public health minded. And when it does, the public health officer is keenly interested. He knows well the value of environmental hygiene in the prevention of disease. It makes sense to him when the lessons learned from the study of sick individuals can be applied to the prevention of ill health. In the maternal and child health field he at once sees the value that could accrue

* Presented before a Joint Session of the Health Officers, Public Health Education, and School Health Sections of the A.P.H.A., and the American School Health Association in coöperation with the National Committee for Mental Hygiene at the Seventy-seventh Annual Meeting of the American Public Health Association in New York, N. Y., October 26, 1949.

from properly oriented prenatal classes, sound delivery, and neonatal care, and well baby conferences, all of which give time for consideration of the mental, emotional, and social aspects of child rearing. But the problem which at once faces him is how to proceed to realize these values.

The health officer and his staff rarely have had much formal training in mental hygiene. Hence he is confronted at once with the need for trained personnel. He must decide to what end he is planning his program. Shall he establish another division to care for those referred by members of his staff who recognize them as needing help, or shall he decide to train his staff to do a more complete job, that is, to deal more adequately with all the needs instead of only the physical—somatic—ones. Probably there is no dichotomy, and if skillfully planned he can work out an excellent preventive and early treatment program. Let us see how this might be done.

The health officer, from experience with other programs, will know that a program is effectively integrated only if it is understood and then accepted as a feasible one. He, himself, may see the need for attendance at an institute in mental hygiene for health officers. Obviously the aim of such an institute is not to make of him a trained mental hygienist but rather to give him an opportunity to acquaint himself with the field and its methods, and thus to open vistas of probable programs and procedures incident to their realization. That is to say, he will come away with a clearer understanding of causes and motives and how to elicit and understand them as well as a better realization of what is practical in his community and how to achieve his goal. He may next wish to carry out an inservice training program. He will need skilled help to do this successfully. As a starting point, for the sake of orientation, he may plan an institute in mental hygiene for nurses and another one for his staff of clinicians. Or he may wisely wish to broaden his activities to include the practising physicians in his community. He probably already has an organization comprised of obstetricians and pediatricians as an advisory body to his maternal and child health activities. Or he may have a health council which will include professional as well as lay leaders. In providing institutes for such groups, he sensitizes the leadership of the community to his projected program and gains not only their understanding but their support. Many a good program had died a-borning because the community was not prepared.

His next or concurrent step is to follow through with the training of his staff. Not all health departments can obtain the services of an adequately trained psychiatrist to act as a full-time consultant and to engage in inservice training. This would be the ideal. It is not now realizable, both because many health departments are not financially able to employ such a person and because the number of such individuals is few indeed. Nor is there any prospect of this number increasing rapidly, primarily because the present nature of the training of psychiatrists falls far short in both the skills and knowledge required. It may be possible in some communities to obtain the part-time services of a psychiatrist who by broad training and experience is qualified. In passing, let me state that experience proves that a small amount of psychiatric care is valuable only when given by a most competent psychiatrist who is thoroughly aware of all the limitations imposed upon him, and who works within those limits. It is not true that a little is good when given by an incompetently trained person, just because the individual never had that much before. It is better not to employ a psychiatrist unless he is competent to do the job. But progress can be made through the

use of persons trained in related fields. The clinical psychologist who has had sound training and experience, preferably both in a child welfare station and in a child guidance clinic, can make a worth while contribution as a consultant and in inservice training particularly in the work of the maternal and child health activities.

So, too, the professionally mature psychiatric social worker can be a valuable addition to the staff. It goes without argument that such personnel will make their contributions as psychologist and psychiatric social worker and not as quasi-psychiatrists.

The use of the nurse especially trained in mental hygiene is still in its infancy. There is, however, already some evidence that such a nurse, working alongside the public health nurses in medical clinics, can contribute to an excellent inservice training procedure. The lessons thus learned make the public health nurse's activities much more productive from a mental health standpoint. Public health nurses have many occasions to know those who have broken down, as well as those who have recovered from illness and now are back in the community. I have in mind the rheumatic fever case, the crippled child, the cardiac, the tuberculous, etc., as well as the patient on leave from a mental hospital. The recognition of emotional stresses and strains which frustrate and arouse anxiety, and their careful handling by the nurse or through referral by her to more skillful hands will make for a more uneventful recovery, just as the failure to identify and deal with them causes many a patient to relapse and to need to return to the hospital. As Weiss has pointed out, it is as necessary to look for focal conflict as to look for focal infection.

Is there no place then for the psychiatric clinic? To be sure there is, but it ought not be established in place of, and at the expense of, a well integrated mental health program in the health department itself. Rather it could well grow out of the needs of the community as a whole. There are many cases which will need the skillful care of the psychiatric clinic, both as a result of failure to deal constructively with the total situation at an earlier period, thus preventing or minimizing *dis-ease* and also because the present state of knowledge does not warrant the conclusion that all types of mental disorder can be prevented or even markedly ameliorated. In large urban communities many clinics serving all ages, or restricted categories of age groups, or even types of emotional disturbance, are needed. In smaller communities, particularly since cost and competently trained personnel are important factors, the clinic personnel should be of such competence that it can carry on a well rounded mental hygiene program. Such personnel could well give the consultation and inservice training as outlined above to all community agencies likely to profit therefrom. Obviously only a small amount of the total available time would be spent in the treatment of individual cases. Here again attention should be called to the necessity of personnel, outstanding in abilities and training. It is by far more important that the staffs in the smaller communities be well trained than is the case in large urban clinics. Supervision and consultation are readily available in large centers. Specialization permits working at the lowest level of competency. In small communities there will be little or no supervision or consultation available. Lack of resources demands that one give such service as will do the most good under the prevailing conditions. This requires competence and judgment, the result of experience. Let us remember to give bread before we offer cake.

Those responsible for school health are particularly concerned with mental health problems. There is a gap of

several years from the end of attendance at well baby conferences to the beginning of regular school days. School health people are becoming increasingly more aware that this gap should be shortened so that the run-about child may profit from preventive care. Nursery schools and the day-care centers are receiving more support, and more time and effort is being spent on them by health officials. In general it has been found easier to interest the personnel of these preschool centers in the emotional welfare of their children than is true of teachers in elementary and secondary schools. Growth and development in this age group has received much attention. Individual differences are more readily accepted. Mothering of this age group comes more naturally, and so acceptance of the children, which makes for security, is the rule. Deviation in behavior beyond normal limits is generally more rapidly brought to the attention of the health personnel interested in mental health, than is true in regular schools. In fact, many of these schools and centers carry on not only a consultative relationship with the parent about his child but expect the parent to attend regular group conferences on child care. Then, too, parents are more interested in wanting to do something about it. There is less tendency to want the nursery school or day-care center to carry the total load. A contrary behavior on the part of the parent almost at once provokes discussion as to the adequacy of the home. This leads to further study and conference with an appropriate social agency if indicated. As a result community resources are mobilized and constructive action is undertaken.

If this be a desirable pattern, what might be done to introduce it into the regular schools? The most important first step is consultation with the superintendent and his staff. Next come the principals of the schools. Let us recall that consultation implies a conference with, a discussing together, a comparing of views. The health personnel must be willing to learn how and why the school operates in the way it does. Only then is the health official in a position to support a possible program.

To illustrate the possibilities let me cite the following: In a conference with school personnel the superintendent stated that he was concerned about the truancy rate in one of the schools. It was learned earlier that in this school the school physician examined all youngsters absent from school for three days or more. It was his belief that in at least 60 per cent of the children examined he could not, from history or examination, establish physical illness as the cause for absence from school. When this was pointed out, the superintendent responded to the challenge to do something to get at the causes for absence from the classroom. He permitted the nurse to make fuller investigations of the homes and to work with the parents. He asked the school psychologist to make a careful study of both the teaching situation and of the pupils' ability to profit therefrom. He became aware of the need for specialized service for the emotionally disturbed youngsters. Above all he wanted help for his teachers so that they could recognize the earliest evidence of emotional disturbance and of inability to profit from the nature of the instruction offered. As a result of the findings, he did not hesitate to transfer teachers, both for the better use of their talents and the good of the children. He was interested in promoting guidance activities, in which the health personnel took an active part, and in discouraging the notion that discipline, in and for itself, is the mark of a good teacher. Parent-teacher meetings began to have content of mutual value to parents and school.

He is now planning an improvement in his social studies classes which will

permit pupils greater opportunity to discuss human relationships. The chief of guidance organized a committee consisting of himself as chairman, the school physician, the school nurse, the school psychologist, the police lieutenant in charge of the juvenile delinquency prevention bureau, the chief probation officer, and the director of the children's bureau. This committee meets weekly to consider such cases as are thought to demand a community approach to the problems presented. Step by step, progress in mental health is being made, guided by the vision, the facilities, and the resources available to the school personnel and the community.

The question has been raised whether the mental health education now being done by mental hygiene societies might not be done by the health educators on the staff of health departments. Certainly the mental health aspects of many health education programs have been overlooked by the health educator. In great part this is due to a lack of knowledge of mental hygiene. Most schools of public health offer little in the field of mental hygiene either in courses for health officers or for health educators. Until this is corrected, health educators could profit by inservice training through attendance at institutes and seminars in mental hygiene held for other health personnel. In this way they could most readily come to appreciate the mental hygiene implications of their present health education activities.

It is becoming a common practice for health educators to show films illustrating mental hygiene subject matter. It is questionable how valuable such films are, unless accompanied by discussion or, better, followed by audience participation. Here is another reason why sound knowledge of the subject matter is imperative. Harm, rather than good, can come and has come from the haphazard showing of such films. A health educator trained in mental hygiene would make a valuable contribution, if a study were devised which would measure the results of much of the current literature intended for lay consumption in all fields of health. On such findings, more appropriate methods of health education could undoubtedly be based.

Time has permitted only a very brief discussion of some present-day public health activities in the field of mental hygiene. It is hoped that the hints given as to the activity of a mental health consultant will illustrate the role he plays in furthering these programs.

Professor Winslow Receives Anderson Medal

The 1949 F. Paul Anderson Medal of the American Society of Heating and Ventilating Engineers was presented to Professor C.-E. A. Winslow, Emeritus Professor of Public Health at the Yale University School of Medicine, New Haven, on January 25 during the 56th annual meeting of the American Society of Heating and Ventilating Engineers in Dallas, Tex. The medal was awarded for "outstanding contributions in the field of heating, ventilating and air-conditioning."

Professor Winslow, who is Editor of the *American Journal of Public Health*, was formerly director of the John B. Pierce Laboratory of Hygiene, New Haven, and was President of the American Public Health Association in 1926. He received the Sedgwick Memorial Medal of the American Public Health Association in 1942.

Attack Rates Among Immigrants to Infected Human Populations*

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AN immigrant, in the epidemiologic sense, is understood to be a person newly introduced to a community, presumably under conditions where diseases new to him are encountered or where the community dosage is different from that to which he has been exposed. Community dosage is used to designate the number of centers of infection. In those instances where there is no reservoir in nature, it means the number of infective persons. Where there is a reservoir in nature, all sources of infections are included.

The number and manner of introduction of susceptible immigrants is an important situation among the several circumstances which govern the genesis of epidemics. Experimental epidemiology, based on this principle, has made essential contributions to the study of the behavior of epidemics, as Webster [6] and Greenwood, Hill, Topley, and Wilson [2] showed in their classical works. The advantage of using controlled animal populations is obvious, but there is need to demonstrate that the same principle holds for human populations under natural conditions. Field studies of human populations, because of the many factors which cannot be measured, are rarely able to yield quantitative data which can duplicate the animal experiment. There are, however, a variety of situations in human communities which follow patterns similar to those for designed immigration experiments in animals, and where it is possible to obtain data for an adequate analysis.

Situations best suitable to this purpose are to be had from military experience where troops serve in foreign areas, and the native population constitutes the reservoir of infection. A similar and satisfactory circumstance is used as a source of data for this paper, where the "immigrants" were student nurses in a hospital for communicable diseases, and the "resident" population was made up of the patients in that hospital with a selected disease, in this case scarlet fever.

A basic requirement for such studies is that records be available, both for the immigrants and the resident population and with advantage, that the birth age of the immigrants is known, as well as the time they had lived in the area of observation. The latter data—called the "cage age" in experimental epidemiology—are often more important than the actual age of the immigrant. The data should be arranged so that the attack rate among immigrants can be related to the following epidemiological factors: the agent, as measured by the community dosage; changes in environment, as indicated by seasonal variation; and changes in host susceptibility in terms of length of exposure to the new condition, which in these human populations could be called the service age.

* Presented before the Epidemiology Section of American Public Health Association at the Seventy-seventh Annual Meeting in New York, N. Y., October 28, 1949.

The seasonal variation in attack rate among immigrants may give a pattern different from that of the resident population, if appreciable numbers of immigrants are introduced into the population in seasons of low frequency. Generally, it will be expected that the highest attack rate occurs in the earlier periods of service, and that it will decline during service, as the immigrants either build up immunity or adapt themselves to the new environment. The opposite may occur, if the adaptation of immigrants is gradual with progressively increasing closer contact with the fixed population, so that increased attack rate is seen as the period of service lengthens. A combination of the two phenomena may result in an intermediate behavior. A study of this complex requires a consideration of attack rates related to community dosage, season, and service age, each considered as independent variables. Information concerning the attack rate in the population from which the immigrants originate is essential as a base line for the evaluation of what happens in the immigration area.

TONSILLITIS AND SCARLET FEVER AMONG STUDENT NURSES IN A LARGE FEVER HOSPITAL

The data were collected during service as resident physician at the Blegdams Hospital, Copenhagen, from October, 1941, to September, 1945. The hospital had at that time a capacity of about 500 beds for communicable diseases, of which a considerable part were devoted to scarlet fever. Student nurses came to this hospital for a 6 month period of training, generally after 3 years' service in general hospitals. The superintendent of nurses kept detailed records on each nurse, including length of service, and of diseases that caused absence from work. From this material, cases of scarlet fever and of tonsillitis causing more than 6 days' absence from work were collected. This selection was arbitrary, but was made in order to assure that diagnoses were definite and that minor respiratory infections of lesser consequence than streptococcus sore throat were excluded. From the same records, the number of nurses on duty each month was determined, with subdivisions according to number of months served.

The community dosage was measured on the basis of the average monthly number of scarlet fever patients in the hospital.

The behavior of streptococcal infections in student nurses was similarly observed for nurses of a general hospital, the Rigshospital, situated in the same part of the city. Data covered the same period as for nurses of the communicable disease hospital. About 100 students were in service monthly at each hospital, but the service period at the general hospital was 3 years.

TABLE 1

Cases of scarlet fever and tonsillitis among student nurses at two hospitals and in the city Copenhagen, 1941–1945

Rates per 1,000 per month

	Nurses Fever Hospital			*Nurses General Hospital*			*City Population*	
		Rates			*Rates*		*Rates*	
Period	*Person Months*	*Tonsil.*	*Sc. F.*	*Person Months*	*Tonsil.*	*Sc. F.*	*Tonsil.*	*Sc. F.*
Oct. '41 – Sept. '42	1,052	58.9	11.4	1,345	16.4	1.5	2.6	0.29
Oct. '42 – Sept. '43	1,258	49.2	7.2	1,254	7.2	–	3.1	0.25
Oct. '43 – Sept. '44	1,429	41.9	12.7	1,101	12.7	0.9	3.8	0.27
Oct. '44 – Sept. '45	1,383	28.1	5.7	931	15.0	–	3.6	0.22
Total	5,122	43.5	9.4	4,631	12.7	0.65	3.3	0.26

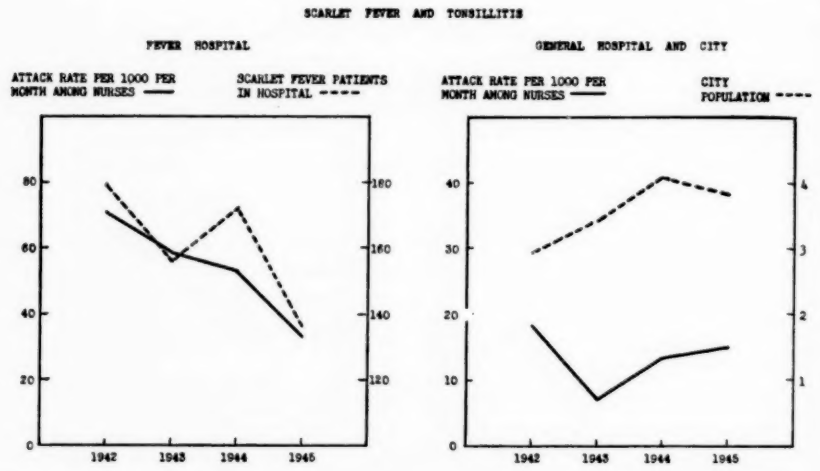


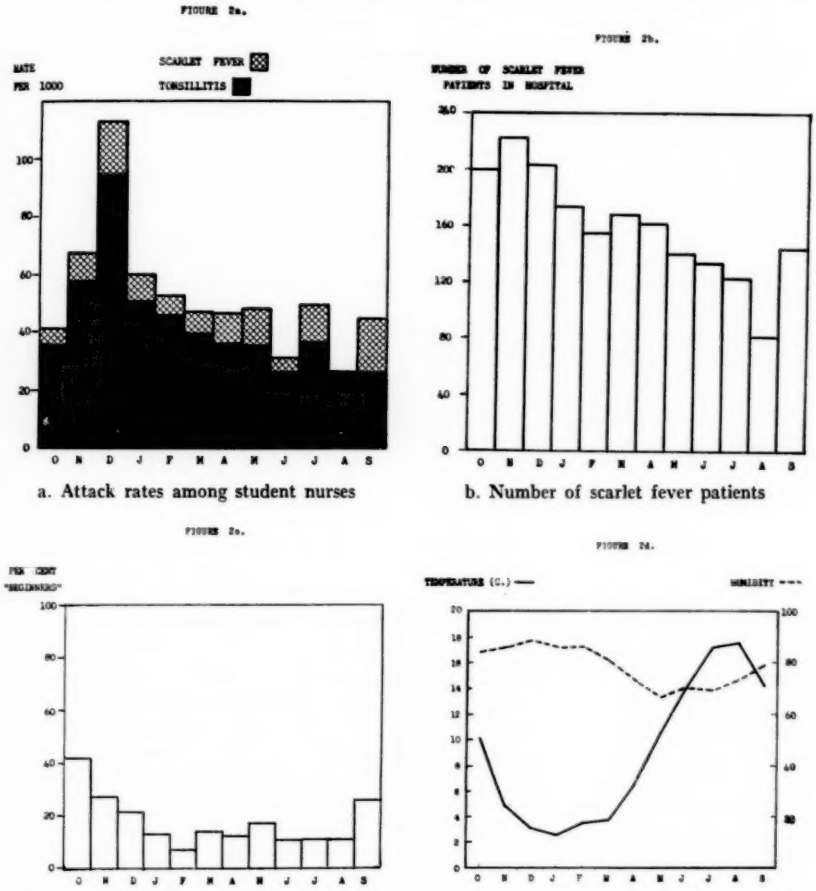
FIGURE 1—Left: Attack rates among nurses compared to number of scarlet fever patients in hospital. Right: Attack rates among nurses at general hospital compared to attack rate in city population.

The attack rates for tonsillitis and scarlet fever are summarized in Table 1, together with the officially reported cases for the population of Copenhagen. Since the latter as usual represent incomplete reporting, they only have significance in regard to the trend of frequency for these two diseases over the period studied. Considering the two diseases together, the risk of attack is four times higher among the student nurses in the fever hospital than among the nurses in the general hospital. The ratio of scarlet fever to tonsillitis in the fever hospital is 1 to 4.6 in contrast to the ratio of 1 to 19.5 for the city population and 1 to 12.7 for the general hospital, presumably because patients with scarlet fever are the main source of streptococcal infections in the fever hospital. As shown in Figure 1, the attack rate for streptococcal diseases among nurses in the fever hospital declines over the 4 years in analogous fashion to the decrease of number of scarlet fever patients. In the same period the trend of streptococcal infections in the city showed a slight increase, while the attack rate among the nurses in the general hospital was fairly constant.

Although the number of scarlet fever patients appears to be a major factor in determining the attack rates among immigrants, it remains to determine the significance of the other factors of environment and host. Figure 2 (a,b,c,d) presents four variables now to be considered, where cases of the 4 year period are grouped together according to calendar months.

The highest attack rates are centered around the month of December (2a) corresponding roughly to the peak of scarlet fever patients admitted to the hospital (2b). But there is also correlation between attack rates and the service age (2c). When attack rates were highest the nurse population contained an undue proportion of beginners. Low temperature and high humidity occur in months with high attack rates (2d). Table 2 shows that the first order cor-

FIGURE 2—Means for calendar months for four variables. 1941–1945



a. Attack rates among student nurses

b. Number of scarlet fever patients

c. Percentage of beginners (first service month) among nurses

d. Temperature and humidity in Copenhagen

TABLE 2

First order correlation coefficients of attack rate (y), community dosage (v), temperature (x), and service age

Number of	*Attack Rate* y	*Temperature* x	*Mean Service Age* z
Scarlet Fever Patients (v)	+.578	−.543	−.518
Temperature (x)	−.376		+.233
Mean Service Age (z)	−.414		

5% significance level $r = \pm .285$
1% significance level $r = \pm .369$

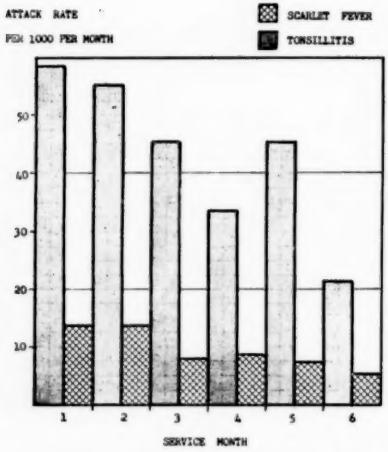


FIGURE 3—Attack rates among nurses according to month of service

relation coefficients were significant in all combinations (all 48 months treated as separate data).

Figure 3 seems to indicate that the attack rate decreased regularly with the length of service, but since most new nurses entered service in the months with greatest risk of infection (largest number of patients with scarlet fever), the relationship of service age to attack rate may not be real.

The effect of the three factors of agent, environment, and host adaptation, upon attack rate requires an analysis which separates the individual factors from their mutual correlation. The analysis of multiple regressions is one method which expresses the dependent variable in terms of several independent variables such as:

$$y = a + b_1x + b_2z + b_3v$$

In the present case y is monthly attack rate among immigrants; x, environment (temperature); z, host adjustment (mean service age); and v, dosage (numbers of scarlet fever patients). The analysis includes a test to determine whether one or more of the coefficients, b, are significantly different from zero. The method is described in several textbooks (e.g., Mather [3]).

The method assumes that y is rectilinearly related to the other variables. Since attack rates form a curved line when plotted against dosage (see Figure 4), y was transformed to a probit of attack percentage, which is rectilinearly related to dosage and the other variables. Weighting of the individual y's is performed by means of appropriate tables (Fisher and Yates [1] Tables IX and XI), following the method commonly used for dosage-mortality data.

The analysis of variance separates the variance of y into four parts, one corresponding to random variation, and the others to the three independent variables. Table 3 presents the results of the analysis, showing that about two-thirds of the oscillation in attack rate can be attributed to random variation,

TABLE 3

Analysis of variance of multiple regression
Effect of v, z and x upon variation of y

		Degrees of Freedom	*Significan = Per cent*	*Per cent of Total Variation*
Variance due to Random Sampling	51.16	44	5	64.4
Community Dosage (v)	20.23	1	1	25.4
Service Age (z)	5.38	1	5	6.7
Season (Temperature) (x)	2.97	1	5	3.7
Total	79.74	47	1%	100.0

while the fluctuation in numbers of scarlet fever patients caused one-fourth of the variation, leaving only insignificant values for seasonal and host variation.

Community dosage being the single significant factor, the type of regression of attack rate upon this factor can now be studied separately. The nurses from the general hospital provide a group not exposed to scarlet fever (dosage = O). Nurses from the fever hospital are subdivided according to average number of scarlet fever patients, to which they were exposed monthly.

Figure 4 shows that the relation of the attack rate per 100 nurses to community dosage is a curve which is of the same form as the lower half of the S-shaped curve relating mortality among groups of experimental animals to dose of a selected agent. The number of scarlet fever patients is, of course, only a partial measure of the total exposure to streptococcal infections. The risk for nurses in environments without scarlet fever is shown by the data from the general hospital.

When probits of attack percentage are plotted against dosage, the regression can be assumed to be rectilinear, since the deviation of the points from the best fitting line is not larger than random error ($\chi^2 = 4.67$ for 6 degrees of freedom). If the best straight line is fitted on Figure 4, the deviation of the points is greater than random error ($\chi^2 = 13.06$).

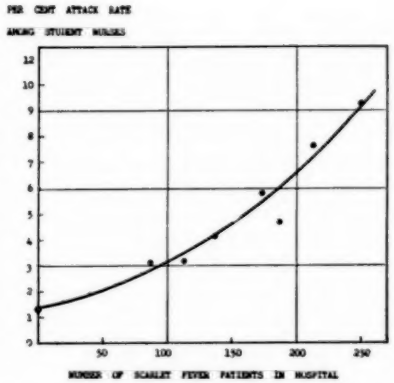


FIGURE 4—Attack rates among nurses according to number of scarlet fever patients

The type of curve presented in Figure 4 is of considerable interest from the standpoint of theoretical epidemiology. It demonstrates that the attack rate did not increase proportionately to the community dosage. There was a relatively greater increase in attack rate at the higher levels of community dosage than at the lower levels. This may explain why the incidence in epidemic periods has a much higher ratio to the reservoir of infection than the ratio of new cases

TABLE 4

Attack among student nurses related to number of patients with scarlet fever in hospital

Average monthly No. of Scarlet Fever Patients	*Mean "dosage"*	*Person-Months Nurses*	*Cases of Scarlet Fever*	*Cases of Tonsillitis*	*Per cent Total Attack Rates*	*Probit of Per cent*
0*	0	4,631	3	59	1.34	2.79
66 – 99	88	852	2	25	3.17	3.14
100 – 125	113	493	3	13	3.25	3.16
126 – 150	137	573	5	19	4.20	3.27
151 – 175	163	1,042	13	48	5.85	3.43
176 – 200	187	936	9	35	4.70	3.33
201 – 225	213	893	12	56	7.61	3.57
226 – 275	250	333	4	27	9.31	3.68

* Data from the general hospital, the rest from the fever hospital

to number of infective persons in endemic periods with low community dosage. Schwentker arrived at similar conclusions in the study of incidence of scarlet fever in relation to carriers in army groups[4] and in general population studies in Roumania.[5] He describes a linear regression of the logarithm of attack rate upon the community dosage. Mathematically, the logarithmic transformation of attack rate is almost identical to the probit transformation for attack rates less than 30 per cent, but the biological interpretation involved in the probit transformation is believed more reasonable. It avoids the biological absurdity that 100 per cent or more of the population will be attacked at very high levels of community dosage, since it describes the attack rate as approaching an asymptote both at 0 and 100 per cent. Furthermore, it is reasonable to believe that the effect of community dosage on frequency of attack follows the same pattern as in experiments involved in bioassay where measured doses are given to each individual of a group.

One of the developments of modern epidemiology toward basic understanding of the genesis of epidemics is to be found in laboratory experiments on the behavior of epidemics in animal populations. As with all experimental science the critical evidence consists in testing the laboratory findings under natural conditions, which has been the purpose of this paper.

SUMMARY

The attack rate of streptococcal infections among student nurses in a fever hospital is studied as an example of the effect of introducing susceptible immigrants to infected human populations under natural conditions. The number of patients with scarlet fever seems to be the dominating factor in determining the attack rate, but other epidemiological factors such as seasonal changes in temperature and the mean service age of the nurses also have significant first order correlation.

An analysis of the independent influence of random sampling, community dosage, season, and service age, shows the two latter factors of environment and host to have, in this particular case, no significant effect upon the variation in attack rate.

The relation of attack rate to community dosage is demonstrated to follow the same type of curve as the S-shaped dosage-mortality curve commonly observed in bioassays where graduated doses are used.

ACKNOWLEDGMENT: The author wishes to thank Miss Reumert, Superintendent of Nurses at the Blegdams Hospital, for admittance to the records and Mrs. Hede Askgaard, Personnel Nurse at the Rigshospital, for a carefully prepared extract of her files.

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Apparent Decline in Tuberculous Infection Among Household Associates of Sputum-Positive Cases of Tuberculosis

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THERE is evidence that the proportion of the general population with tuberculous infection, as well as tuberculous disease, is now much lower than it was at one time. There is also considerable evidence that the attack rates from tuberculous disease vary among household associates of cases of tuberculosis, depending on several characteristics of the index cases.[1] There is less evidence that tuberculous infection among household associates of known cases of tuberculosis is rarer now than in past years. The purpose of this paper is to present such evidence, and to describe certain changes among index cases which are associated with this apparent drop in tuberculous infection. The tuberculosis control program conducted for many years in Cattaraugus County, New York, and the records of case and contact supervision lend themselves to analyses having a bearing on this problem.

This tuberculosis control program was extensively reorganized in 1928 by Dr. John H. Korns. The reorganization brought into operation the essential features of a modern control program, even by today's standards. The record-keeping system established at that time has been maintained without significant change. In routine annual tabulations of these records, Korns[2] noted a drop in the proportion of positive tuberculin tests among contacts of sputum-positive cases of tuberculosis within several years of establishment of the reorganized control program.

METHOD OF STUDY

Because of the consistency of the policies, record-keeping, and performance in the program, it was felt that valid comparisons could be drawn between different time periods. Records were considered sufficiently reliable to begin analyses as of January 1, 1929. The analyses continued through 1946, for a period covering 18 years, which resulted in a natural division into three 6 year periods, 1929 through 1934, 1935 through 1940, and 1941 through 1946.

The Bureau of Tuberculosis supervised all household associates of known cases of tuberculosis, but those who had contact with positive sputum were followed most intensively. Among persons aged 0 through 25 it was customary to use 0.1 mg. of old tuberculin intradermally as a routine procedure to detect tuberculous infection. Older persons

Presented before the Epidemiology Section of the American Public Health Association, at the Seventy-seventh Annual Meeting in New York, N. Y., October 25, 1949.

were not routinely tuberculin tested, receiving a medical history, physical examination, and x-ray of the chest. The vast majority of the tuberculin tests were done by the intradermal method. The Vollmer patch test was rarely used prior to 1943, though about half of the tests done between 1941 and 1946 were patch tests.

Because it was felt that the age of the contacts, age, stage of disease and sex of the index cases, and duration of contact were of importance in determining the frequency of tuberculous infection, all of these were considered.

Variable factors were by definition held as constant as possible throughout the time period covered by the study. Only the immediate household associates of sputum-positive cases of tuberculosis were studied. Non-white persons were excluded. Sputum-positivity was defined as a record of any positive sputum, provided the examination was done by direct smear and microscopic examination. The tuberculin tests were read, in most instances, by three individuals—Dr. John H. Korns, Dr. E. K. Richard, and Dr. Richard Nauen, who were, in succession, the directors of the Bureau of Tuberculosis during the time period covered by this study. Those not read by the directors were read by adequately trained public health nurses who were felt by the directors to be entirely capable of interpreting the tests.* The duration of contact was estimated in months. Contact was defined as beginning when the case of tuberculosis was diagnosed, terminating when the case died or was, from some other reason, completely removed from the household. It was considered to be interrupted during those periods of time when the patient was receiving institutional care for his tuberculosis and was, of course, terminated when the contact was dropped from observation. This definition of beginning of contact is arbitrary, but it is obviously quite difficult to determine accurately the onset of the average case of tuberculosis since it is so gradual in most instances.

DECLINE IN TUBERCULOUS INFECTION; VARIATION ACCORDING TO CHARACTERISTICS OF INDEX CASES

Table 1 presents the tuberculin status of the observed contacts as their observation was terminated within the three time periods.

TABLE 1

Tuberculin Status of 432 Household Associates of Sputum-Positive Cases of Tuberculosis in Three Time Periods

Date	*Number Observed*	*Tuberculin-Positive*	*Per cent Positive*
1929–34	144	113	78.5
1935–40	170	98	57.7
1941–46	118	60	50.9
Totals	432	271	62.7

It is apparent that, in the 6 year period 1929 through 1934, approximately 78 per cent of the household associates of sputum-positive cases of tuberculosis were infected as indicated by the tuberculin test, but only slightly more than half of the household associates were similarly infected in the 6 year period 1941 through 1946.† The proportion of the general population of similar age in Cattaraugus County having a positive tuberculin test is much lower than the proportion shown in Table 1. There is no evidence of a similar decline in the infection rate in the general population, either on a relative or on an absolute scale, so there is little reason to believe that such a decline

* It should be mentioned that a few persons who developed manifest tuberculous disease while under observation were classified among the tuberculin-positive.

† A slightly younger group was tuberculin tested in the more recent years. This would tend to make the 1941–1946 figure artificially low, but on standardization for age the proportions positive for the three time periods are changed very little, the proportions positive becoming 77.8, 57.7, and 52.8 per cent respectively. Since the observed differences are many times greater than can be accounted for by age alone, age standardization was not done in subsequent tabulations.

plays a considerable part in the change described above among the household associates of sputum-positive cases of tuberculosis. In other words, a drop in the number of sources of tuberculous infection outside of the household is believed to be of little significance in this group.

Tables 2 through 5 indicate the importance of age of index cases, stage of disease, sex of index cases, and duration of exposure of contacts to index cases.

TABLE 2

Tuberculin Status of 432 Household Associates of Sputum-Positive Cases of Tuberculosis According to Age Group of Index Cases

Cases Age Group	*Number Observed*	*Tuberculin-Positive*	*Per cent Positive*
0–24	143	101	70.6
25–54	228	146	64.0
55+	61	24	39.3
Totals	432	271	62.7

TABLE 3

Tuberculin Status of 432 Household Associates of Sputum-Positive Cases of Tuberculosis According to Stage of Disease of Index Cases

Cases Stage	*Number Observed*	*Tuberculin-Positive*	*Per cent Positive*
Minimal	94	49	52.1
Moderately Advanced	189	126	66.7
Far Advanced	149	96	64.4
Totals	432	271	62.7

It will be noted in Table 2 that associates of relatively young (age 0–24) cases of tuberculosis have a rather high ratio of tuberculin positivity, whereas contacts of cases of tuberculosis 55 years of age and over show evidence of infection less frequently. As might be expected, Table 3 shows that the infections of household contacts occurred with less frequency when the index case was in the minimal stage of disease. There appears to be no difference between contacts of moderately and far advanced cases of pulmonary tuberculosis as far as the probability of infection is concerned. Table 4 indicates that women apparently cause infections among their household associates more frequently than do men.

TABLE 4

Tuberculin Status of 432 Household Associates of Sputum-Positive Tuberculosis According to Sex of Index Cases

Cases Sex	*Number Observed*	*Tuberculin-Positive*	*Per cent Positive*
Male	189	110	58.2
Female	243	161	66.3
Totals	432	271	62.7

TABLE 5

Tuberculin Status of 432 Household Associates of Sputum-Positive Tuberculosis According to Duration of Exposure in Months to Index Cases

Months Exposure	*Number Observed*	*Tuberculin-Positive*	*Per cent Positive*
0– 1	217	134	61.8
2–23	125	71	56.8
24+	90	66	73.3
Totals	432	271	62.7

The effect of duration of exposure (Table 5) on the probability of infection is less obvious. The household associates who had exposure to source cases for

TABLE 6

Tuberculin Status of 432 Household Associates of Sputum-Positive Tuberculosis According to Age and Sex of Index Cases

Index Cases Age Group	*Index Cases Male*			*Index Cases Female*			*Index Cases both Sexes*		
	Number Observed	*Tuberculin-Positive*	*Per cent Positive*	*Number Observed*	*Tuberculin-Positive*	*Per cent Positive*	*Number Observed*	*Tuberculin-Positive*	*Per cent Positive*
0–24	39	24	61.5	104	77	74.0	143	101	70.6
25–54	113	72	63.7	115	74	64.4	228	146	64.0
55+	37	14	37.8	24	10	41.7	61	24	39.3
Totals	189	110	58.2	243	161	66.2	432	271	62.7

one month or less were found to be approximately 62 per cent tuberculin-positive. When the duration of exposure was 2 to 23 months approximately 57 per cent were positive, and when the duration of exposure was 2 years or more, slightly over 73 per cent were found to be positive. It should be recalled, however, that our arbitrary definition of exposure would tend to distort these figures somewhat. Since exposure was considered to begin at the time of diagnosis, and since, in the early years covered by this study, diagnoses were sometimes made only shortly before death, it is believed that deaths occurring soon after diagnosis contribute to the high proportion of infections in the group that had exposure for one month or less.

Table 6 results from combining the factors of age and sex of index cases. It is of interest that whereas on the average approximately 63 per cent of the contacts of sputum-positive cases of tuberculosis had positive tuberculin tests, 74 per cent of the contacts of women age 0 through 24 had positive tests, but only 38 per cent of the contacts of men aged 55 and over had such positive tuberculin tests.

COMMENT; CHANGES CONTRIBUTING TO DECLINE IN TUBERCULOUS INFECTION

From the data summarized in Tables 2 through 6, it is fairly obvious that differences in age of index case, stage of disease, sex of index case, and duration of exposure to sputum-positive tuberculosis all are associated with differences in the probability of infection among household contacts of such cases.* It is equally obvious that any shift in one or more of these factors will have an influence on the average probability of infection among the contacts. It is a matter of record that in Cattaraugus County, as well as in other areas,[3] a greater proportion of minimal cases has been diagnosed in recent years and their contacts have been placed under observation. Similarly, there has been a shift in the age and sex distribution of the diagnosed and recorded cases of tuberculosis, and deaths from the disease,[3–5] with a greater proportion of elderly men and a smaller proportion of young women being discovered when we compare recent with more remote experience. In addition, considerable effort has been expended, not only to secure earlier diagnosis, but to secure earlier and more prolonged hospitalization, especially for sputum-positive cases of tuberculosis. All of these factors, namely a greater proportion of minimal cases, elderly males, and promptly hospitalized cases may have been of importance in producing the apparent reduction in tuberculous infection in this group. The tables which follow may serve to illustrate the changes in the distribution of the contacts according to these characteristics as they have occurred with the passage of time.

Table 7 in the total columns repeats the point made in Table 2; that contacts of young persons with tuberculosis have a much higher probability of being tuberculin-positive than do contacts of older persons with tuberculosis. It illustrates also that, in our observed group of contacts at least, the probability of being in contact with young cases of tuberculosis was greater a number of years ago than more recently. The inevitable result of this combination of circumstances is a drop in the proportion of tuberculin-positive contacts with the passage of time. Reasoning from these data to the general situation, it appears not unlikely that, as the age distribution of our cases of tuberculosis in the general population has changed,

* If it is considered that the patch tests used to a certain extent in the years 1943–1946 are less sensitive than the intradermal type of test, it could be inferred that a part of the apparent decrease in tuberculin sensitivity may be due to the type of test used. However, it cannot be inferred that the type of test used is responsible for different ratios of tuberculin sensitivity among the various classes of contacts.

TABLE 7

Number, Per cent Distribution and Tuberculin Status of 432 Household Associates of Sputum-Positive Tuberculosis According to Age Group of Index Cases for Three Time Periods

	1929–34				1935–40				1941–46				Totals			
Cases Age Group	Number Observed	Per cent	Tuberculin-Positive	Per cent Positive	Number Observed	Per cent	Tuberculin-Positive	Per cent Positive	Number Observed	Per cent	Tuberculin-Positive	Per cent Positive	Number Observed	Per cent	Tuberculin-Positive	Per cent Positive
0–24	52	36.1	42	80.8	57	33.5	38	66.7	34	28.8	21	61.8	143	33.1	101	70.6
25–54	85	59.0	66	77.6	91	53.5	49	53.8	52	44.1	31	59.6	228	52.8	146	64.0
55+	7	4.9	5	71.4	22	12.9	11	50.0	32	27.1	8	25.0	61	14.1	24	39.3
Totals	144	100.0	113	78.5	170	99.9	98	57.7	118	100.0	60	50.9	432	100.0	271	62.7

TABLE 8

Number, Per cent Distribution and Tuberculin Status of 432 Household Associates of Sputum-Positive Tuberculosis According to Stage of Disease of Index Cases for Three Time Periods

	1929–34				1935–40				1941–46				Totals			
Index Cases Stage	Number Observed	Per cent	Tuberculin-Positive	Per cent Positive	Number Observed	Per cent	Tuberculin-Positive	Per cent Positive	Number Observed	Per cent	Tuberculin-Positive	Per cent Positive	Number Observed	Per cent	Tuberculin-Positive	Per cent Positive
Minimal	21	14.6	13	61.9	36	21.2	21	58.3	37	31.4	15	40.5	94	21.8	49	52.1
Moderately Advanced	71	49.3	58	81.7	76	44.7	41	53.9	42	35.6	27	64.3	189	43.7	126	66.7
Far Advanced	52	36.1	42	80.8	58	34.1	36	62.1	39	33.0	18	46.2	149	34.5	96	64.4
Totals	144	100.0	113	78.5	170	100.0	98	57.7	118	100.0	60	50.9	432	100.0	271	62.7

TABLE 9

Number, Per cent Distribution and Tuberculin Status of 432 Household Associates of Sputum-Positive Tuberculosis According to Sex of Index Cases for Three Time Periods

Index Cases Sex	1929–34				1935–40				1941–46				Totals			
	Number Observed	Per cent	Tuberculin-Positive	Per cent Positive	Number Observed	Per cent	Tuberculin-Positive	Per cent Positive	Number Observed	Per cent	Tuberculin-Positive	Per cent Positive	Number Observed	Per cent	Tuberculin-Positive	Per cent Positive
Male	60	41.7	42	70.0	63	37.1	41	65.1	66	55.9	27	40.9	189	43.8	110	58.2
Female	84	58.3	71	84.5	107	62.9	57	53.3	52	44.1	33	63.5	243	56.2	161	66.3
Totals	144	100.0	113	78.5	170	100.0	98	57.7	118	100.0	60	50.9	432	100.0	271	62.7

TABLE 10

Number, Per cent Distribution and Tuberculin Status of 432 Household Associates of Sputum-Positive Tuberculosis According to Duration of Exposure in Months to Index Cases, for Three Time Periods

Exposure in Months to Index Cases	1929–34				1935–40				1941–46				Totals			
	Number Observed	Per cent	Tuberculin-Positive	Per cent Positive	Number Observed	Per cent	Tuberculin-Positive	Per cent Positive	Number Observed	Per cent	Tuberculin-Positive	Per cent Positive	Number Observed	Per cent	Tuberculin-Positive	Per cent Positive
0–1	74	51.4	57	77.0	83	48.8	48	57.8	60	50.9	29	48.3	217	50.2	134	61.8
1–23	37	25.7	28	75.7	54	31.8	28	51.9	34	28.8	15	44.1	125	28.9	71	56.8
24+	33	22.9	28	84.9	33	19.4	22	66.7	24	20.3	16	66.7	90	20.8	66	73.3
Totals	144	100.0	113	78.5	170	100.0	98	57.7	118	100.0	60	50.9	432	99.9	271	62.7

so has the probability of infection among the contacts of these cases.

The number and proportion of persons under observation exposed to sputum-positive minimal tuberculosis increased between 1929 and 1946. This is shown in Table 8. During the period 1929–1934, 14.6 per cent of the associates were exposed to minimal cases, while in the period 1941–1946 this proportion had increased to 31.4 per cent. The proportion exposed to far advanced tuberculosis remained about constant, the shift being due largely to a reduction in exposure to moderately advanced cases of tuberculosis. The moderately advanced cases, however, were shown in Table 3 and again here, to be at least as potent in producing positive tuberculins among their associates as are the far advanced. Here again we note that an increasing proportion of contacts of minimal tuberculosis cases who have less probability of being tuberculin-positive than do contacts of persons with advanced disease results in an overall decline in the proportion positive to the tuberculin test.

As was shown in Table 6, household associates of women with sputum-positive tuberculosis are more frequently tuberculin-positive than contacts of men. In Table 9 it is shown that with what amounts to a reversal in the proportion of contacts exposed to the two sexes there has, as a natural result, been a drop in the proportion of tuberculin-positive contacts. Thus the change in the sex distribution of tuberculosis cases has played a part in the apparent reduction in tuberculous infection among the observed contacts.

From Table 10 it appears that, in spite of the effort expended in attempts to secure earlier and more prolonged hospitalization of open tuberculosis cases, there has not been a measurable reduction in exposure among their associates who were observed in this study. A consistent upward trend in tuberculin-positivity with increasing exposure is not demonstrable. This differs from Brailey's[6] experience in Baltimore. It thus appears that our arbitrary definition of the beginning of exposure as synonymous with the date of diagnosis is not sufficiently critical to detect diagnoses made more promptly after the onset of symptoms. Earlier diagnosis is perhaps better shown in Table 8, where the increase in the proportion of associates exposed to minimal disease is presented. From Table 10 we can conclude only that prolonged exposure, especially if it has continued for 2 years or more, is more hazardous than brief exposure.

SUMMARY AND CONCLUSIONS

A group of 432 household associates of sputum-positive cases of tuberculosis was studied over an 18 year period in Cattaraugus County, New York.

There is evidence that the proportion positive to the tuberculin test has declined from 78.5 to 50.9 per cent.

The proportion of household associates positive to the tuberculin test varies with certain characteristics of the index cases, being higher for associates of women, young persons, cases with advanced disease, and in situations where exposure is prolonged.

The distribution of the household associates of cases of tuberculosis has changed over the 18 year period. With the exception of the "prolonged exposure" group, association with each of the above categories of cases was less frequent in the latter part of the 18 years.

It is suggested that this group of associates of sputum-positive cases is a fairly representative group, and that a general decline in tuberculous infection may have taken place among such associates largely because of changes in the characteristics of the tuberculosis cases themselves.

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A National Recruitment Program for Public Health

Remarkable as have been the accomplishments of preventive medicine and public health in the United States during the past fifty years, tremendous new advances in the preservation of health and life are possible in a short period of time if all present knowledge in the field could be fully utilized. All of us can point to many reasons why progress is not more rapid. But underlying most of these obstacles is a basic difficulty—the shortage of trained personnel.

The qualitative and quantitative shortage in public health personnel of all categories is neither a recent development nor one unique to public health. It is perhaps more acute in public health than in many other scientific disciplines because of the great expansion in demand for public health services in the war and post-war years.

Dean Simmons points out . . . there are now 35,800 individuals engaged in full-time public health work in the United States. An adequate national health program will require about 68,000 health specialists in 1960. Of these, about 20,000, or 2,300 per year, will require formal advanced training. In 1947–48, only 655 students were registered in the nine accredited schools of public health.

Attacks on this fundamental recruitment problem have been sporadic, localized, short-lived, and often unsuccessful. Now, for the first time, a logical solution to this pressing problem has been proposed by the American Public Health Association—a nation-wide project under the auspices of the Association's Committee on Professional Education. The report outlining the project stresses the need for liaison with other national agencies such as the State and Territorial Health Officers Association, the Federal Health Agencies, the American Medical Association, the Association of American Medical Colleges, the Conference of Professors of Preventive Medicine, the Association of Schools of Public Health, the National Health Council, and social scientists of all types with "know-how" and experience in recruitment.

The American Public Health Association has formulated and put into action many far-reaching programs reflecting the wisdom of its leadership and the "public-good-first" attitude of its broad and varied membership. We believe no past project, however essential, has been so basic and necessary to future progress in public health as this proposed recruitment program.

The recruitment project, recently submitted to the State and Territorial Health Officers, points out that "it is recognized that this is indeed a difficult problem and that the suggested remedies are many and diverse. . . . In this instance there may be basic underlying problems involved as, for example, the attitude of the public toward government, toward employment in public health service, and toward the respect in which career service is held."

"The Association proposes to apply scientific methods to discover the underlying causes of this shortage and to adapt a program to whatever the findings may be. This study will include: (1) Research and planning; (2) Active recruitment at the service level."

A great deal of thoughtful planning has obviously preceded the report of the American Public Health Association on this vital problem. If its tentative proposals become operative (as seems probable from the resolution adopted by the State and Territorial Health Officers and the acceptance by the Federal Agencies) many active health workers will be involved in the program. The project has obvious advantages for the Schools of Public Health. Underlying all planning and expansion at Harvard are the harassing questions of numbers and abilities of its future students. We applaud the American Public Health Association for its proposed program and leadership. Cooperation of the School and its Alumni serving in key positions in public health seems assured.—*Harvard Public Health Alumni Bulletin*, Nov., 1949.

The British National Health Service

The Role of the Health Officer *

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TWELVE months' experience of the working of the British National Health Service Act is now available, and I can perhaps most usefully illustrate the role of the health officer to this joint session by dealing factually with London's experience under the leadership of Sir Allen Daley, who is personally well known to many of you.

What the health officer actually does, is represented graphically in the accompanying chart. In the case of London, will you please relate it to a population of 3½ millions, 60,000+ births a year, nearly 250,000 children under the age of 5, over 350,000 school children and 10.8 per cent of the population over the age of 65. I commence with maternity and child welfare, which many would agree is the most productive of all the preventive medicine services.

Section 22 of the Act specifies that it "shall be the duty of every local health authority to make arrangements for the care, including in particular dental care, of expectant and nursing mothers and of children who have not attained the age of five years . . . " The four services next dealt with are involved in the fulfillment of these duties.

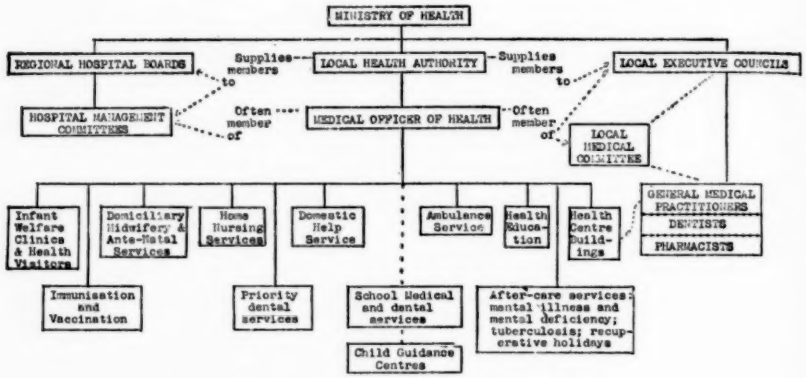
Infant Welfare has been established as a public health activity since the beginning of the present century, but its development as a routine service has been more particularly steady and systematic over the last thirty years. The basic tools are the infant welfare center (well baby clinic) and the health visitor (public health nurse). London has 163 centers with 1,600 sessions a month. Attendances of children under 5 are at the rate of nearly one million per year. They are naturally heaviest during the first year of life, when mothers feel the need of advice most keenly. Dried and liquid milks, vitamins and simple drugs are available at cost price, charges being remitted on a scale which depends on income.

The Health Visitor—The team work which goes on under medical direction in these centers is admirably supplemented in the home by the health visitor. She is, of course, part of the center team and the children from her district attend the center, usually on the days when she is on duty there. First and foremost a health educator, she devotes special attention to the infant but also gives domiciliary supervision to the antenatal health of the woman who is to have a hospital confinement. The new service also imposes on this key health worker the duty of giving advice to persons suffering from illness (and thus of supplementing the work of the family doctor), and also advice as to the measures necessary to prevent the spread of infection. In infant welfare the goal (quite often achieved) is six visits in the first year of life and quarterly visits thereafter.

For this work London has 350 health visitors. In this, as in every other field

* Presented at a Joint Session of the Dental Health, Medical Care, and Public Health Nursing Sections of the American Public Health Association at the Seventy-seventh Annual Meeting in New York, N. Y., October 27, 1949.

CHART ILLUSTRATING THE NATIONAL HEALTH SERVICE ACT WORK OF THE HEALTH OFFICER



of nursing, there is a shortage of woman power, and it will be some time before London reaches its intermediate goal of one health visitor to each 150 births—which would give a case load of about 500 to each worker. The usual method of becoming a health visitor is to undertake 6 months' special training (followed by an examination) after taking the basic S.R.N. (State-registered nurse) qualification, which itself takes three years as a rule. The whole subject of nurse training is under active review, and in due course the health visitors' syllabus will no doubt be modified. One school of thought wishes to see her devote as much time to training in social science as to nursing. My personal view is that her nursing training is fundamental and the social science part subsidiary.

This general service for infants is supplemented by 120 day nurseries or creches with 6,500 places, for the children of women who for family reasons must go out to work.

Maternity Welfare—The complement to the infant welfare center is the antenatal clinic. In the towns, 60 per cent of the confinements are institutional; for these the essential antenatal work is done at the hospital, but interim care is often carried out at the municipal center. Of the 40 per cent who have their babies at home, a majority attend the antenatal center and receive both medical care and supervision from the midwife who will attend the confinement. London has 118 of these centers with 950 monthly sessions and nearly 200,000 annual attendances. There are also some 10,000 attendances for postnatal examination each year. Under the Act, any expectant mother can have medical attention during her pregnancy and confinement, either from her own doctor or from a specially experienced general practitioner obstetrician. It is too early yet to say whether this facility will in due course result in diminished use of the antenatal clinic. Logically it should do so, in which case some of the health education work at present undertaken may not be fully replaced. But logic is not universally regarded as the Englishman's strong point! There are 242 midwives engaged on this domiciliary service in London. They attend about 17,000 confinements a year and, being now nearly all trained in the technique, give gas and air analgesia to 65 per cent of their patients. This subject recently had a very thorough Parliamentary airing and these very satisfactory figures will doubtless become still better. Meanwhile, much work is pro-

ceeding to make trilene available for use by midwives in a foolproof form in the near future.

Dental Services—As this is a joint session I should perhaps deal with these next. The subject has an Alice-in-Wonderland flavor. The local health authority is and was responsible for the "priority" service (expectant and nursing mothers and children under 5), and for school dentistry. For these services, it employed usually whole-time dentists with an upper salary limit of about £1,000 ($4,000). In anticipation of the national service, a committee under Sir Will Spens went carefully into what earnings for general dentistry should be. Further consideration of this report led to the decision that justice would be done if the ordinary man in his private surgery, working an average of 33 chair-side hours a week, earned a gross income of £3,100 ($12,400). Practice expenses would reduce this to a net income of £1,790 ($7,160) (post-war values). In due course this, with expert advice, was turned into a scale of fees for the various things dentists do for the patients, conservative work being relatively the better remunerated. The result, to some people at any rate, was unexpected, as most dentists seem to be drawing cheques from executive councils for sums vastly in excess of what was projected. Thus, evidence before the Select Committee of Parliament examining the administration of the Health Services, indicated that 9,000 dentists would for 1949–1950 cost the country £30,904,000 ($123,616,000) as compared with £45,800,000 ($183,200,000) paid to over 19,000 general practitioners. In any undertaking as great and complex as the British National Health Service, growing pains are inevitable. In this particular instance toothache seems to be an unexpected but important part of the symptomatology! Not unnaturally many whole-time dentists left the salaried service to obtain their share of the rewards available in the general service, and this, despite two subsequent cuts in the piece rates. Adjustments in the rates of the salaried men will be under discussion in the very near future and meanwhile London, despite a 30 per cent loss, has the equivalent of 62 whole-time dentists doing nearly 680 sessions of dental work per week in the priority and school dental services.

The Home Nursing Service (Bedside nursing)—Every local health authority has the duty to provide, directly or through voluntary agencies, "for securing the attendance of nurses on persons who require nursing in their own homes." In Britain this had hitherto been a voluntary service, associated particularly with the Queen's Institute of District Nursing, the local authorities paying for the nursing of certain types of illness, and other patients contributing what they could afford. The service is now administered directly by some authorities, and by others, including London, through the district nursing associations still continuing as voluntary agencies. Since the introduction of a national health service there has of course been increased pressure on hospital beds, and the home nursing service has been of very great value in caring for the many cases for whom a hospital bed was not essential, or in certain instances not available. London has 28 associations employing 300 whole-time nurses. They have over 5,000 cases on their books at any one time and make over one million annual visits. Needless to say, they work only under medical instructions except for emergency visits.

The Domestic Help Service—This service is permissive, but operated by most local health authorities. Patients pay for it on a scale of charges based on income. It is used particularly for maternity cases and for the chronic sick and, like the home nursing service, has been of inestimable value in supplementing

institutional resources. The demands on it are illustrated by the fact that in London it has expanded fourfold in 18 months (it was in operation by the boroughs, before the Act came into force). The getting ready of children for school, cooking of meals, domestic cleaning, simple household washing, and in some instances shopping, are items which will illustrate the scope of the service. London has 200 maternity and 7,000 general cases receiving this domestic help at any one time. The help to individual cases is based on an assessment of their needs and may vary from an hour a day to full time (44 hours per week). It uses services equivalent to those of 1,250 whole-time workers at a cost, including administration, of £350,000 ($1,400,000) per annum.

Immunization and Vaccination — These are undertaken in two ways: (a) by general practitioners, who are paid a fee for notifying approved particulars to the local health authority, and (b) on a sessional basis in the well baby clinics and schools. Immunization is concentrated mainly on diphtheria prophylaxis, but to an increasing extent whooping cough also is included. Three-quarters of London's child population are now immunized, results in other parts of the country being comparable. The good results thus secured on a voluntary basis led to the repeal of the compulsory vaccination laws. The public, however, are not yet making equally wide use of this service. Thus, in the first 6 months of the operation of the Act, 27,000 primary immunizations were completed in London as against 10,000 vaccinations.

The Ambulance Service—This again is a local health authority service, the statutory duty being to secure "that ambulances and other means of transport are available, where necessary, for the conveyance of persons suffering from illness or mental defectiveness or expectant or nursing mothers from places in their area to places in or outside their area." London's service is organized in two sections, accident (and emergency) and general (or hospital removals). In 1948, the accident section answered 66,000 calls, of which 14 per cent were for street accidents, 17 per cent for other accidents, and 33 per cent for the transport of maternity cases to hospital. The general section covered two million miles in conveying 240,000 patients to their appropriate destinations.

Prevention of Illness, Care and Aftercare—The main services requiring brief consideration under this head are tuberculosis, mental health and mental deficiency, and recuperative holidays. The treatment side of tuberculosis is now a function of the Regional Hospital Boards, the social and preventive side and aftercare, of the local health authority. For this purpose, London employs 63 tuberculosis visitors, 2 almoners, and 15 care committee secretaries. There are also 24 care committees of voluntary workers associated with individual tuberculosis dispensaries. On the rehabilitation side, plans for a night sanatorium associated with a Ministry of Labour factory, providing sheltered employment are also under active consideration. Dietary supplements of milk and eggs are available to any patient who needs them.

In the mental health field, local health authorities are responsible for getting into hospital patients who need that form of care because of mental illness. The first 12 months' work under the Act necessitated over 6,000 removals in London, the 24 hour service occupying the time of 21 whole-time officers. Aftercare work is delegated to three voluntary bodies, one of which runs six psychotherapeutic social clubs to help patients secure social readjustment. The other two undertake domiciliary visiting and find and supervise suitable homes for patients needing long-term residential care, after discharge from mental hospitals.

Mental deficiency work involves the annual ascertainment of over 650 cases and the domiciliary supervision of 5,000 mental defectives; 36 social workers are engaged in these duties.

Patients who have been ill and need medical or nursing attention, go to convalescent homes under the aegis of the Regional Hospital Boards. Those who do not need this attention are the responsibility of the local health authority, and go to "recuperative holiday homes." Incidentally, the former class go free, the latter pay up to £1.1*s*. ($4) per week according to their means! London provides this form of aftercare for some 2,000 adults, 300 expectant or nursing mothers and 4,500 children annually. The "holiday" varies from 2 to 6 weeks, and is extended in special cases.

Time will permit only the mere enumeration of the epidemiological duties of the health officer, of his school medical work, of child guidance centers, of the chiropody services, and of the local health authority's duty to provide health centers, and undertake health education. But the catalogue of facts must mention that London employs 36 whole-time and 246 part-time doctors in maternity and child welfare, and 16 whole-time and 151 part-time doctors in school medical work. These medical services are, in total, equivalent to the work of 125 whole-time doctors. There are also 400 whole-time school nurses, and 145 trained social workers, assisted by 1,500 voluntary workers, who arrange for the medical treatment of school children and do any necessary follow-up work.

The environmental sanitation duties of the health officer must be omitted entirely from this paper. Enough has been said, however, to indicate that the National Health Service leaves the health officer with plenty to do, and that much of it is genuinely preventive. But the most important role of the Medical Officer of Health has still to be mentioned. He is, as the Minister of Health has said more than once, the link between the various branches of the health service. No longer has the general practitioner grounds to regard him as a competitor. The tendency seems to be, indeed, to employ more general practitioners and less whole-time officers in the preventive services. Membership on the local medical committee and often on the Executive Council, fosters close contact and mutual understanding, as obviously does membership in the local branch of the British Medical Association. Health centers will in due course strengthen this link. On the hospital side, membership on the local hospital management committee and mutual concern with problems of tuberculosis, infectious disease, and chronic illness, extends still further the value of the Medical Officer of Health as a unifying influence. Liaison with the administrative medical officer of the Regional Hospital Board(s) is a very important duty.

What does the service cost? London's annual bill is at present nearly £4,000,000 ($16,000,000), of which the maternity and child welfare service takes £522,000 ($2,088,000), day nurseries £760,000 ($3,040,000), ambulance services £460,000 ($1,840,000), midwives £206,000 ($824,000), medical *treatment* of school children £180,000 ($720,000), mental health £116,000 ($464,000), and prevention of illness, care and aftercare £664,000 ($2,656,000). (Before the change-over, the London County Council also spent $60,000,000 on its hospital services. This has now become a state charge.) Of the present bill, the Government pays half, and I would remind you that the British National Health Service was not, and is not, a subject of political controversy. Its form will naturally be subject to evolutionary changes, and methods of paying for it may be subject to modification, but the basic pattern will remain.

Chemicals Introduced in the Processing of Foods*

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THE processing of foodstuffs for dietary purposes involves chiefly physical treatment, such as the trimming, cutting, and cleaning of vegetables, the butchering of meats and the application of heat or cold to foods of either plant or animal origin. From early days, however, man has made use of available technologic aids to help in the preservation of foods. Salt, flavoring materials and spices have long been used for the purpose of enhancing the flavor of food articles. At times in the past, some of the ingredients employed for the preservation of foods, or for the improvement of their acceptability to consumers, have been found to be contrary to the public interest. While the main protection to consumers has been, and will continue to be, the reliability of food manufacturers and their awareness of possible health hazards, there have also been enacted laws to protect the public. The federal law and the laws of every state prohibit the incorporation of harmful or deleterious substances in foods.

In recent years a considerable number of new chemicals have been brought to the attention of food processors and manufacturers. In many instances, it is questionable whether existing knowledge of the metabolic processes of nutrition is sufficiently extensive to warrant scientific approval of the use of some of the ingredients which have been incorporated in foods. The question arises whether the public needs greater health protection than now is afforded. The present article is a brief account of some of the substances introduced purposely in the processing of foods, from the viewpoint of their effect on consumers, in an attempt to answer this question. Traces of substances may be introduced inadvertently during processing or during storage or the preparation of foods for consumption; but the present report is concerned only with substances which are knowingly added to foods.

The substances purposely incorporated in foods during processing are included for nutritional or functional reasons, or both. The distinction in purpose may best be explained by examples.

The chemicals added to foods to enhance their nutritive value include all the vitamins and minerals of the well recognized enrichment and fortification programs. Such are the iodization of table salt, the fortification of margarine with vitamin A, the fortification of milk and evaporated milk with vitamin D, and the enrichment of flour and bread with thiamine, riboflavin, niacin, and assimilable iron preparations. Programs have also been worked out for the nutritional improvement, by vitamin and

* Presented before the Food and Nutrition Section of the American Public Health Association at the Seventy-seventh Annual Meeting in New York, N. Y., October 25, 1949.

mineral additions, of corn meal and corn products, rice, and prepared breakfast cereal foods. The fortification and enrichment of foods with vitamins and minerals represent programs for nutritional improvement of important foods in accordance with modern knowledge of dietary requirements for health. They have been developed by the food industry with the guidance of nutrition experts and the sympathetic coöperation of government and industry.

The iodide added to table salt has been cited as an example of a chemical substance added to a food product for nutritional reasons. Usually potassium iodide is the iodine preparation employed for this purpose. Traces of thiosulfate may be added also, in order to stabilize the iodine content of the salt; in fact, unless such a stabilizer is incorporated in the salt it is quite likely that the iodine content of the table salt will be greatly reduced on storage. Such stabilizers, then, represent substances added for functional reasons. The tricalcium phosphate added to table salt to confer "free-running" properties represents another functional ingredient.

In general, functional ingredients are those which may be incorporated in the processing of foods for definite reasons, either to facilitate manufacturing processses or to confer some property to the finished article which is of interest or importance to purchasers and users of the article.

NUTRITIONAL EFFECTS OF SOME INGREDIENTS ADDED FOR FUNCTIONAL PURPOSES

Improvement in the nutritive value of foods is often a happy corollary to the use of substances added primarily for their functional value. The various calcium salts afford an interesting example. For the "hot biscuit" section of the country, phosphated flour has long been available. This is flour with added monocalcium phosphate. The purpose of the calcium salt is to correct for possible excessive use of baking soda in the preparation of sour milk biscuits. Calcium monophosphate is a common acidifying salt in self-rising flour and prepared pancake mixes. Tricalcium phosphate has been shown to be a useful inhibitor of caking in powdered sugar, although for this purpose starch is more commonly employed. The nutritional value of calcium salts in baking powders which contain them has been emphasized by Melnick, Oser, and Hockberg. Calcium acid phosphate may be used in bread production as an acidifying agent to correct for high pH of the water used in baking, or as an inhibitor of rope and mold. For the latter purpose, other calcium salts, such as calcium propionate, are similarly employed. Calcium salts are used in the formulation of so-called yeast foods for commercial bakers. The use of calcium salts as firming agents in the production of canned tomatoes and canned potatoes is a recognized procedure, permitted in the standards for these products. In every instance the calcium salt not only serves a useful purpose but also increases the nutritive value of the food to the extent to which it contributes additional calcium.

A recent survey of the calcium content of commercial white pan bread made throughout the United States showed that it amounted to, on the average, 401 mg. of calcium to the lb. Milk products accounted for much of this calcium, but calcium salts included for functional purposes also contributed. Tables of food composition, based on analyses of bread made some years ago, indicate much lower calcium figures.

Statistics of the Bureau of Commerce reveal that the consumption of monocalcium phosphate in 1948 amounted to more than 72 million lbs., or almost 0.5 lb. per capita. Nearly all of this calcium salt was used for food purposes. The quantity involved is sufficient to

supply at least 20 per cent of the average person's daily dietary allowance for calcium, assuming of course equitable distribution.

ASCORBIC ACID

Because of its chemical properties, ascorbic acid has been found to be useful in the prevention of browning in some cut fruits, notably peaches. Frozen sliced peaches, the fresh fruit color of which has been stabilized through the addition of ascorbic acid, contribute additional small amounts of vitamin C to the diet. The amount used is about 150 mg. of ascorbic acid per lb. of frozen fruit.

SODIUM CHLORIDE AND SALT SUBSTITUTES

Salt as an ingredient of processed foods is receiving considerable attention among physicians and dietitians because of the interest in low-sodium diets in the treatment of hypertension and other disease conditions. Sodium chloride is a dietary essential and, while low intakes are necessary for persons with certain disease conditions, increased intakes are indicated for individuals with some other diseases and for healthy persons who are subjected to environmental conditions which induce profuse sweating, with a consequent excessive loss of salt through the skin. Salt under ordinary circumstances is a condiment. Most people salt their foods to make them more palatable. It is customary to use salt both in domestic and commercial preparation of foods, the amounts being dictated primarily by considerations of flavor. To meet the needs of patients on salt-free or, as they are better termed, low-sodium diets, special preparations have been formulated such as canned, water-packed vegetables and salt-free bread.

An interesting development in connection with the use of low-sodium foods has been the formulation of salt substitutes which impart some degree of salty flavor to foods, but which contain no sodium. Potassium salts have met with some acceptance for this purpose. It is now clear that lithium chloride is unsuitable as a salt substitute.

It is unfortunate that, only after several deaths had occurred among patients using a lithium-containing salt substitute, lithium chloride was recognized as toxic under the conditions of its use in low-sodium diets. Had lithium chloride been considered as a drug, it could not have been sold for therapeutic purposes until its safety had been established by adequate experimentation under controlled conditions. As a "salt substitute," however, the new drug provisions of the Food, Drug and Cosmetic Act were not invoked.

It does not seem to be generally realized that new chemicals, intended for use in foods (unless conclusively known to be fraudulent) can be prohibited from interstate commerce only if their toxicity, or deleterious nature, if any, is demonstrated. Evidence of harmful properties must be substantial to hold up in court. The burden of proof rests on the government, in this case the Food and Drug Administration. Obviously, the time required to obtain conclusive information about some proposed ingredients may mean that considerable damage has been done before the situation is brought under control. It may be conceded that firms selling chemicals for use in foods are acting in good faith, on the basis of judgment which they as businessmen consider competent, but it is a fact well known to scientists that the results of preliminary tests may not be borne out by more extensive and intensive investigation. It should be recognized also that much more evidence will doubtless be necessary to demonstrate the harmlessness of some ingredients of foods than is needed to indicate the uses and limitations of a new drug.

CHEMICALS WHICH REQUIRE CONSIDERATION

Among the chemicals introduced in foods for functional purposes are the wetting agents, emulsifiers, stabilizers, so-called food improvers and preservatives, antioxidants for fats, and so on. Many of these substances are foreign to natural foods and little may be known about their behavior in the body. Not only may some of the substances suggested for functional reasons in food preparation be potentially hazardous in themselves, but the use of some of them also involves changes in the nature and nutritive quality of our foods which may not be recognized by consumers or even by those concerned professionally with matters of public health.

Many years ago Dr. H. W. Wiley and his collaborators in the Bureau of Chemistry of the U. S. Department of Agriculture reported elaborate studies of the influence of food preservatives on digestion and health. As a result of these investigations, which still serve as models of thoroughness, and the investigations of the so-called Remsen Boards, the use as food preservatives of boric acid and borax, salicylic acid and salicylates, sulfurous acid and sulfites, benzoic acid and benzoates, and formaldehyde, were prohibited entirely or, in the case of benzoates, and sulfur dioxide and sulfites, permitted in certain foods under rigidly specified limitations.

Because of the opinion which has been expressed in some quarters, and which no doubt has a modicum of truth, that government restrictions may act as a deterrent to progress in food technology, it may not be amiss to consider the effect of the ban of the use of formaldehyde as a preservative, say, in milk. Today there is everywhere available fresh milk, pasteurized and safe to drink, as nutritious as it is palatable, which keeps sweet for many days under conditions of ordinary refrigeration in the home. To bring this about has required a great deal of investigation and work by the dairy and allied industries, but the result has been a product of which industry, health authorities, and food regulatory officials may justly be proud. How much of this program would have been possible if, in the early days of pasteurization at the close of the 19th century, small amounts of formaldehyde had been tolerated as a functional ingredient of milk?

Today we are confronted with other problems, some of which are no doubt just as difficult of solution now as were the questions posed by certain food preservatives 45 or more years ago. A few illustrations of questions recently considered by food regulatory officials may point up the problem which confronts all those interested in the maintenance of the integrity of our food supply.

MONOCHLORACETIC ACID AS A PRESERVATIVE OR STABILIZER

Monochloracetic acid, a white solid synthesized in the laboratory many years ago, first came to attention as an inhibitor of bacterial action in food products as a result of work done in Europe, for which a French patent was issued in 1933. Tests by members of the food and chemical industries showed its potential usefulness in the preparation of certain fruit juices, soft drinks, beer and wine. As little as 0.05 per cent or less of monochloracetic acid as an ingredient would permit effective pasteurization at lower temperatures, avoiding thereby discoloration or the formation of turbidity, and giving the beverage a crystal clear or sparkling appearance. Tests by competent pharmacologists, which were reported in the scientific literature, seemed to show conclusively that the monochloracetic acid in the concentrations which were commercially useful, is harmless "even in continued daily ingestion by infants."

Later studies in other laboratories

showed that monochloracetic acid is very irritating to the gastrointestinal tract and acts to inhibit respiration of tissue cells. In the light of the other favorable reports, however, these reports of unfavorable effects may not have seemed to be conclusive; at any rate monochloracetic acid was offered for sale to the food processing industries, and it was used for its functional value in the production of beer, wine, and other products. During the war, however, large numbers of soldiers in a southern camp exhibited severe gastrointestinal distress, with nausea and vomiting. Study revealed that the condition was caused by the consumption of beverages which had been "stabilized" with monochloracetic acid. Apparently this evidence, coupled with the reports of other laboratory studies, was conclusive enough for the courts to accept. Hundreds of thousands of dollars worth of beer were ordered to be destroyed because it contained monochloracetic acid. An even greater quantity, in money value, of wine had to be destroyed, and it is said that some smaller wineries were obliged to go out of business because of the loss of an entire year's output. Through such activity, the food processing and beverage industries have learned that monochloracetic acid is not suitable for use as an ingredient of articles offered for sale to the public. Can the conclusion be drawn that it would be better to require adequate testing of any new ingredient intended for use in food products before it is used, rather than afterward?

THIOUREA

In 1933, there were published reports that thiourea, a substance found to be effective in 1926 for the stimulation of growth of potato shoots, would prevent the browning of cut fruits exposed to the air. This was before the effectiveness of ascorbic acid for this purpose in some products had been shown. Two American patents covering the use of thiourea for the prevention of browning of cut sections of apples, pears, and peaches were issued in 1937 and in 1943. There were published several reports from the laboratories of the corporation to whom the patents had been assigned, to show the harmlessness of thiourea. But in 1941, three investigators at Johns Hopkins University studied the effect of thiourea on the thyroid glands of experimental animals. Thiourea was found to have a depressant effect on the thyroid, inhibiting the production of thyroxin. Further studies in several laboratories amply verified this observation, and also showed beyond question that thiourea is a dangerous substance which has no place in foods. Yet in 1946, the Food and Drug Administration made several seizures of frozen peaches which contained hazardous quantities of this ingredient, about 45 p.p.m. of thiourea. When fed to adult rats, so that the quantity of thiourea consumed was about 1 mg., the animals died overnight and, on autopsy their lungs were found to be filled with a watery exudate. Relatively small doses of thiourea are poisonous to all animals to which the material has been given. The use of this substance for medicinal purposes, as in the treatment of hyperthyroidism, is outside the scope of present considerations.

Because of its therapeutic usefulness, or the usefulness of some related compounds, thiourea has received considerable study. It is now known that long continued ingestion of thiourea by experimental animals results in a high incidence of thyroid hyperplasia with the development of adenomata. The occurrence of tumors in the liver has been reported when animals have been given amounts of thiourea that may be below those necessary to cause marked hyperplasia of the thyroid.

In the food technology literature one

may find reports that thiourea is capable of stabilizing vitamin C, preventing loss of ascorbic acid in solutions, and retarding the development of rancidity in dried milk formulations such as are used in infant feeding. Thiourea has been found to prevent the development of mold in wheat of high moisture content, and the investigators who observed this effect were cautious enough to test the effect of thiourea on the germination of the wheat. In the concentrations employed they reported that the effect on wheat germination was negligible. Three reports over a period of years have demonstrated that the dipping of oranges in solutions of thiourea has a striking effect in preventing stem-end rot and decay by the blue and the green molds, but traces of thiourea remain in the rind and, in a relatively short time, appear in the juice of the oranges. The technologic details for the most efficient method of treating oranges with thiourea have been worked out and reported, but it is hardly likely that they will be put into operation. Nor is it likely that homemakers or manufacturers will follow the implied suggestions published, and later retracted, by one of the government agencies on the use of thiourea in the preparation of frozen peaches.

NITROGEN TRICHLORIDE

Nitrogen trichloride is a gas with which few students of chemistry in our schools and colleges have an opportunity to become acquainted in the laboratory, but which until recently has had intimate contact with most of the breadstuffs which everyone eats. Introduced to American millers from Europe about twenty-five or thirty years ago as a substance for the artificial maturing of flour, nitrogen trichloride soon reached the forefront of chemical agents for the rapid improvement in baking properties of either bakery or family flour from freshly milled wheat. It was recognized by the Food and Drug Administration as a suitable bleaching (and maturing) agent for flour. It must be conceded that the evidence in support of the harmlessness of this treatment of flour had appeared to be adequate, and today there is no indication whatever of any harm to human beings from the consumption of nitrogen trichloride treated flour or its baked products.

Late in the year 1946, however, Sir Edward Mellanby reported that flour treated with nitrogen trichloride, when incorporated with milk and suitable vitamin and mineral supplements in a diet adequate for the growth of puppies, or the maintenance of older dogs, produced a pathological condition in the dogs known among veterinarians as canine hysteria, running fits, or fright disease. It is a nervous disorder that can be cured if it has not progressed too far, by changing to unbleached flour or to flour which has been treated with other recognized bleaching and maturing agents. Within a few weeks, Mellanby's report had been verified and extended as the result of several independent studies in the United States. It was found that other species of animals, the cat, rabbit, rat, monkey, and ferret, showed central nervous system disorders when fed large amounts of flour heavily treated with nitrogen trichloride. Feeding tests with human volunteers were negative, even though competent investigators looked for disturbances with all the facilities of modern medicine at their disposal.

There has been no nitrogen-trichloride-treated flour permitted on the market since August 7, 1949, and even before that time the use of this agent had diminished to nearly the vanishing point. Its disappearance resulted from the voluntary action of American millers who, in effect, asked for the elimination of nitrogen trichloride from the standards for bleached flour and the substitution of chlorine dioxide as a suitable bleaching and maturing agent. Ex-

periments showed no deleterious effects from the feeding of flour treated with this latter agent. As a result of such evidence presented at a public hearing, the Food and Drug Administration revised the standard for bleached flour.

The subject of bleaching of flour has had a long history, but the work done as a result of the nitrogen trichloride incident emphasized the relative paucity of knowledge as to the mechanism of the action of artificial maturing agents on flour. There are a number of countries where chemical bleaching or maturing of flour has been prohibited for one reason or another, and the physical characteristics of the bread in these countries are different from those of ordinary American white pan bread. Perhaps the fact that artificial bleaching and maturing agents and oxidizing agents have been recognized in the United States is an example of how progress, say along the lines of improving baking quality of flour by the application of heat, has been retarded. This is a subject that could well be explored thoroughly by the milling and baking industries. The per capita consumption of wheat flour has declined considerably from what it was before the use of bleaching and maturing agents came to be common in the milling industry, and oxidizing agents (which have much the same functional value as the maturing agents) came to be used in the baking industry. There have been many conjectures about the possible causes of this phenomenon of declining consumption. There is no more proof of the validity of any of these suppositions than there is that the effects produced by chemical treatment of the flour or dough may be responsible, in some degree at least.

MINERAL OIL

Mineral oil is not absorbed, except possibly in minute traces, from the digestive tract, and it has no food value. It is used medicinally as a mild cathartic. In foods, it has been used for fraudulent purposes, as a substitute for food oils or fat without label declaration, or it has been incorporated in salad oils and dressings, and in mayonnaise, with labeling of the products as foods of particular usefulness in dietary caloric or fat restriction. The sale of foods containing mineral oil is considered illegal, even if the label declares the presence of mineral oil, because the courts have held such preparations to be deleterious. There is ample reason to support this stand, for the ingestion of mineral oil with other foods, as is inevitable when mineral oil is incorporated in such foods, results in the excretion of excessive amounts of some of the fat-soluble vitamins, which are soluble in the mineral oil and carried with it out of the body. The food factors capable of being lost in this manner are carotene, vitamin D (with a consequent disturbance of the metabolism of calcium and phosphorus), vitamin K, and no doubt other substances of importance.

During World War II days, and afterward when the supply of fats was short, there may have been a temptation to substitute mineral oil for food oils. Violations of the prohibition against the use of mineral oil in food have been recorded in instances involving popcorn, salad oils and dressings, mayonnaise, and a few other food products.

OTHER INGREDIENTS AGAINST WHICH REGULATORY ACTION HAS BEEN TAKEN

An examination of the notices of judgment published lately shows several other instances where an alert Food and Drug Administration has brought action in the interest of public health. Saccharin, a product with an interesting history, has been found as a substitute for part of the sugar in soft drink beverages and other foods. Fluorides have been found in beer, where they have been

included for preservative properties. Quaternary ammonium compounds have been found in a few other foods, in which it appears either as a contaminant from the use of this material in sanitizing apparatus or as an added preservative. Surely all would agree that action to prevent such abuses is highly commendable. With a limited number of federal food inspectors, however, one wonders how many other instances are not recognized, and one wonders also how well abuses which do not involve products sold in interstate commerce are taken care of.

INGREDIENTS OF DOUBTFUL SIGNIFICANCE

There are a number of chemicals being offered for sale to food manufacturers, about the safety to health of which little is known. Parahydroxybenzoic acid, first used in Europe, is being offered to food manufacturers as a preservative in place of benzoic acid. There is a patent covering a process for the treatment of flour with diluted nitric acid; an orange colored product is obtained as one would expect in recalling the xanthoproteic reaction as a test for proteins. When dried and mixed with ordinary flour to the extent of 2 per cent, and with the addition of a little soya flour and lecithin, the resulting preparation has been offered for sale to bakers. The function of this preparation is to convey a deep yellow color, similar to that produced by egg yolks, so that a bun or sweet roll has a better consumer acceptance, at least as far as appearance of the article is concerned. The effects on human beings of eating products containing this nitric-acid treated flour are unknown.

The trade journals of the food processing industries almost regularly contain announcements of new chemicals which reputedly have a functional value in certain processed foods. Advertising literature, samples, and demonstrations may help convince a businessman that a particular chemical has merit. If the processed food under consideration is not one of the relatively few for which definitions and standards of identity have been established by the Food and Drug Administration, then the businessman is in a position to take a considered risk and use the ingredient. The competency of the manufacturer and the wisdom of his scientific advisers may afford just about all the protection the consumer receives in some instances. If used the chances are excellent that consumers and health officers will be unaware of the nature of the new ingredient.

EMULSIFYING AGENTS IN BREAD AND OTHER FOODS

Beginning November 30, 1948, the Federal Security Administration reopened a public hearing for the purpose of receiving information which would enable the Administrator to develop a definition and standard of identity of bread and bread-like buns and rolls. This hearing was concluded on September 20, 1949. Although there were some recesses during the course of this reopened hearing, the taking of testimony covered more than 100 days, and the transcript of the record covers thousands of pages. This would seem like a great deal of testimony about the ingredients of a food item such as bread, but much of the record is devoted to testimony about certain chemicals which were unknown in the baking industry prior to 1946 or 1947.

Among the proposed ingredients for inclusion in the standard are the surface active agents sometimes designated as "bread softeners." One of these compounds, or mixtures of substances, which conveys to the finished baked loaf properties which some bakers have testified they liked, is polyoxyethylene monostearate. This is not a pure chemical compound, but a mixture of substances produced in the polymerization of ethyl-

ene oxide, or of ethylene glycol, depending on the method of manufacture, followed by esterification with a fatty acid, which may be commercial stearic acid. It is conceded by the manufacturers that only about 40 per cent of the molecule (the fatty acid portion) has possible food value; the polyoxyethylene portion is excreted partly by way of the intestines and partly by way of the kidneys. It is not established that none of the polymerized oxyethylene moiety remains in the tissues of the body. Evidence of the possible toxicity of this substance is conflicting. It has been recommended for use by bread bakers to the extent of ½ lb. to each 100 lbs. of flour; more has been used, and less has been suggested. It has been found that this material precipitates the amylose fraction of wheat starch, leaving an excess of the amylopectin fraction in the bread. The bread has an unusual softness when removed from the oven, probably because of the alteration of its structure. There is evidence that such bread stales at the same rate as bread which does not contain the softener, but it remains measurably softer to squeezing throughout the normal shelf-life of the bread.

The so-called emulsifiers or surface active agents are being used, it is reported, in commercial cake as well as in some prepared cake mixes, in salad dressings and mayonnaise, in ice cream, and in many other products. The first commercial product in the cake field seems to have been developed during World War II as a substitute for eggs, which were in short supply. Eggs, in addition to their nutritive value, have a functional value in cake batters; the lecithin of the egg yolk is a fairly efficient emulsifying agent because it is soluble in fats and in water.

Apart from the question of possible harmful or deleterious effects of some of these substances, there is a nutritional question involved in their use. Should the inclusion of the newer emulsifying or surface active agents in foods encourage or permit the replacement of appreciable amounts of ingredients such as milk, butter, eggs and shortening in processed foods, there is the possibility that the nature and nutritive quality of our dietary may be significantly altered without the knowledge of consumers or the awareness of persons interested in public health.

CONCLUSIONS

The use of chemicals in the processing or formulation of many foods is increasing. In many instances the use of certain substances as ingredients of processed foods raises grave questions of the effect of their use on the nutritive quality of our diet, and on the health of consumers. While the present Food, Drug and Cosmetic Act affords considerable protection, to manufacturers as well as to the public, there is insufficient protection offered in the case of products for which definitions and standards of identity have not been promulgated. A considerable improvement would be provided if the Federal Food, Drug and Cosmetic Act were amended to require the same unbiased consideration, and approval prior to their use, of new substances intended for foods as the present law now extends to new drugs.

The British National Health Service*

General Practitioner Services

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THERE are many dramatic stories and reports in circulation about the frightful things that are happening to the time-honored institution of general practice in Britain—stories of how the general practitioner is being turned into a little cog in a vast bureaucratic machine; of how his previous high standards of work and service are threatened by the mechanization of what was, before the 5th of July, 1948, assumed to be a highly individual and humanistic personal service; and of how the patient, previously so well cared for, has now become a mere number on a doctor's list to be dealt with and dismissed as quickly as possible. Some of these stories are half-truths, but the majority of them are the result of wishful and wilful thinking, and most of those which *do* have a basis in fact, are symptoms of a long-term illness from which general practice suffers, and not an acute illness, the cause of which is so readily assumed to be the new National Health Service Act.

The unfortunate general practitioner finds himself at the emotional vortex of many of the controversies which center on the National Health Service. He has in fact, become the victim of his own "glory," of last century concepts of "the family doctor," which have been carried forward to the present day, but which survive only in the world of fantasy try as we will to give them reality. He is what Mannheim might call a "non-contemporaneous contemporaneity."

What exactly is general practice?

It isn't *exactly* anything. It is regarded as though it were an entity, a specific thing, which can be defined, observed, and measured in standard and objective terms. However, it is not an entity, and defies comprehensive definition, it lacks standards and there are no established or accepted criteria for measuring or judging even particular examples of general practice. All this, together with the continued identification of general practice with an almost extinct ideal, "family doctoring," is the basis of the long-term illness to which I have just referred.

In these circumstances, before we can consider what immediate and future effects the National Health Service Act is having or is likely to have on general practice it is essential to try to understand the state of general practice at the time the Act was introduced.

As far as I have been able to ascertain, there were then three major types or "patterns" of general practice, (1) General practice in industrial areas, (2) General practice in "better class" urban residential areas, and (3) General practice in rural areas, and I want to tell you a little about each of these.

In terms of scope and quality of, and facilities for medical care, "industrial" practice comes at the bottom of the scale.

* Presented at a Joint Session of the Dental Health, Medical Care, and Public Health Nursing Sections of the American Public Health Association, at the Seventy-seventh Annual Meeting in New York, N. Y., October 27, 1949.

The scope of work undertaken by the average general practitioner, working in an industrial area was as limited as the volume was great. It was limited almost entirely to rapid diagnosis based on a minimum of consultation and examination and to such simple therapy as could be carried on with "bottle" and pill or syringe and needle.

The doctor's surgery or, as you would call it his office, was most frequently a converted shop or residence, nearly always forbidding of aspect, functionally unsatisfactory and in absolute terms poorly equipped.

The doctor works within the limits imposed by his own surgery and equipment; he has had no access to the large hospitals and very little contact with his colleagues, either specialists or fellow general practitioners.

So limiting are these conditions that there is a levelling of "quality" of both individual doctors and standards of care. From the point of view of public safety, the important consideration in such circumstances is the ability of the individual doctor to make a quick and correct diagnosis, based on a minimum of evidence.

Hospitals (particularly outpatient departments) and Local Government Authority services, compensate for the deficiencies of this type of practice, but do not supplement the routine work of the doctor.

The work of the G.P. has never been satisfactorily integrated with the work either of the hospitals or the Local Authority services such as maternal and child welfare, midwifery, school medical, health visiting, etc.

At the upper end of the scale there is rural practice, and here we find that the functions and responsibilities of the doctors still approximate rather closely those of his prototype, the old "family doctor." The rural practitioner undertakes responsibility for a great many things; often for a certain amount of surgery which he does at the local cottage hospital, for the bulk of the diagnostic problems which his patients present, for nearly all the obstetric work which is not grossly abnormal, for a certain amount of routine clinical pathology, and for the psychological problems which assume an ever increasing importance.

His surgery or office, is usually a pleasant establishment functionally far from perfect, but reasonably well equipped with the apparatus and instruments essential to his daily work. He knows his patients as people, and his families as families. If he has the personal skills and the facilities provided by even a small cottage hospital and well equipped surgery, he can and does work on a very high professional level. He is not as isolated as his industrial colleague; as a rule, specialists visit the cottage hospital from time to time and he at least has the benefit of intermittent contact with them.

When you are trying to visualize rural practice in England, it is important to remember that 30 or 40 miles is a great distance, that road, rail, and telephone communications are good, and that the real problems of geographic isolation, as you know them in America, simply do not exist.

Between these upper and lower limits we have what I have termed "better class" urban residential practice. Here the scope of the work undertaken by the doctor and the nature of the surgeries and equipment, are something between the two extremes just discussed.

The best of these practices approximate to good rural practice, and the worst to "industrial" practice, but as a group they form a "type" of their own.

You will see, I hope, even from these brief remarks, that general practice is complex and that we must consider the impact of the National Health Service Act on its various manifestations and

not on any hypothetical and undefined entity loosely termed "general practice." But before we go on to do this, I want to make some general observations:

1. General practice has adapted itself to the growth and development of hospital and specialist services; it has not developed concurrently.
2. The development of hospital and specialist services has most frequently been at the expense of general practice, not to its benefit.
3. This has been the case particularly where large hospital centers have grown up and has given rise to the paradoxical situation where today general practice is at its worst in closest proximity to the big hospitals and improves in both scope and quality in almost direct proportion to the distance away from the hospital center.
4. This process of adaptation of general practice without concurrent development has gone on over a long period. Throughout this period general practice has enjoyed an immunity from analysis and criticism, and in its security it has failed to be self critical or to set and maintain standards.

Now let us examine the *direct* implications of the Act so far as it concerns general practice. There are three main points:

1. National Health Insurance has been extended to cover 100 per cent of the population instead of the 40 per cent covered before July 5, 1948.
2. New techniques for remunerating the doctor have been introduced.
3. Provision has been made for the future development of Health Centers.

The extension of health insurance has thrown an additional load (both in absolute numbers and in demands for service) on the existing machinery of general practice; it has not altered its nature or structure. Just how great this additional load is, it is difficult to say. The latest Registrar Generals' Report puts it at 10 per cent above a comparable period *pre* July 5, 1948. But whatever the size of the increase the chief thing it demonstrates is the basic weaknesses in the present structure of general practice and the inability of the weaker parts to take the strain.

We may disagree with the principle of National Health Insurance; we may agree but think that this extension was untimely; but we are only fogging the issue if we try to attribute the shortcomings of general practice to National Health Insurance as such.

Much of the professional animosity to the new service stems from the doctors' real or imaginary interpretation of the intrinsic evils of receiving their financial reward in any other way than directly from the hands of their patients. I do not want to minimize the significance of this issue, significant if for no other reason than the emotional disturbances it has caused, but I must point out that once again techniques for remunerating the doctor have nothing to do directly with the structure of general practice, and to attempt to identify these two things, methods of remuneration and the structure of general practice, is again to cloud the issue. Furthermore, I would say that there is little concrete or observable evidence to support the popular contention that the doctors' conduct or way of practice is changing because of the introduction of the capitation system of payment.

Much of the noise and fuss over this issue is due to points petty in themselves, but personally annoying to the doctors and rightly classifiable as "teething pains."

The big issue, the hope and at the same time the despair of the general practitioner, is the question of health center development. But before we go on to consider this I want to say something about the *indirect* implications of the Act so far as general practice is concerned. These, despite the fact that they have caused little or no concern, are far more important than the direct issues, which have caused so much controversy and ill feeling.

I have pointed out previously how general practice has adapted itself to hospital development without itself

developing concurrently, and how other services, for example, those run by Local Government Authorities, have compensated for deficiencies in general practice, instead of supplementing the work of this group of the medical profession.

The Health Services Act by giving new impetus to hospital and specialist development and by altering and increasing Local Government Authorities' responsibilities in the field of medical care, has exacerbated this state of affairs.

This is leading to an intensification and worsening, so far as general practice is concerned, of the situation *pre* July 5, 1948, which has been briefly discussed.

General practice is now really under attack. It is an insidious attack, which is going on without anyone having the embarrassing task of openly criticising or naming the many serious shortcomings of general practice, as it is at present.

Strangely, the best elements of general practice are being attacked first and most strongly. The general practitioner-surgeon, who is normally the country doctor with cottage hospital facilities is the No. 1 target. I would not want to defend the obvious and tangible mistakes of the G.P. surgeon, but I would point out that this man is usually, in general terms, the best of G.P.'s and that the vigor of the crusade against him is out of all proportion to the problem he presents and is being extended far beyond the defensible limits of surgery reform and into most of the other territory, which the G.P. can still claim as his own. It should also be noted that this "crusade" is being headed not by the lay "planners" but by the specialists, themselves doctors.

Hospital development as represented by the "upgrading" of small hospital units implies the elimination of G.P.'s from the staff and accordingly the "down grading" of general practice.

While this is going on, little or no attention is being paid to the weakest elements of general practice, which are found in the areas of dense urban population and which have been described previously. There is nothing left there which can be taken from the G.P. His many and important sins of medical omission (e.g., missed diagnosis) are not dramatic or tangible as are the sins of commission (e.g., surgical) of his colleagues in better circumstances, who still retain some measures of real responsibility, and so, for the time being he is disregarded.

The trend is to reduce all general practice to the lowest common denominator.

In the face of the present state of general practice, health centers are the obvious and possibly the only solution to the problem. The health center has been prescribed as the panacea for all the ills of general practice, but the conception of a health center is quite as vague as the conception of general practice.

The positive steps which have been taken in this direction offer little to the G.P. in his present crisis. Authority for health center development has been vested in Local Government and most of the thinking and planning for particular health centers has been oriented towards Local Authority services, with general practice again a secondary consideration.

Altogether the general practitioners are having less to do with the determination of their own destiny in the new service than anyone else. The Executive Councils, responsible for general practitioner services, and even the local medical committees, are completely preoccupied with the day-to-day problems of administration. They are not working or thinking in terms of policy as, for example, are the Regional Hospital Boards. There is no coördination at the policy level betwen these two improtant bodies. This is not just the result

of a simple mechanical defect in the administrative set-up, which can be solved by appointing liaison officers or joint committees. Until policy decisions about general practice have been taken there is nothing to coördinate.

In conclusion, I want to say that I have deliberately tried to avoid discussing the many interesting and contentious issues, which provide most of the "copy" for those who write and talk about Britain's new medical service. Instead, I hope, I have shown you a background against which these important "symptoms" can be given perspective and appreciated at their real worth.

Now to sum up:

1. General practice has long enjoyed an immunity from analysis and criticism. In its security it has failed to establish and maintain standards. In spite of this, due to the identification of all "general practice" with the ideal of "family doctoring" it has maintained the reputation of being good, *per se*.

2. At present, general practice is the weakest and at the same time the most important element in the whole medical service. The future of the service as a means of providing adequate medical care, as distinct from excellent and extravagant medical care at the hospital and specialist level, depends on the stabilization of general practice. The financial future of the scheme may well also depend on this factor.

3. Such stabilization in turn depends on a realistic assessment of the present condition of general practice and a clear definition as to the future province and function of the general practitioner.

4. In the absence of such an assessment and definition, present policy is resulting in the further deterioration of general practice.

5. The present issues of greatest contention, such as size of capitation fees, mileage rates, the number of patients on a doctor's list, the demand for spectacles, who should or should not get basic salaries or special inducement payments, etc., are all of them important to both the individual doctor and for their own sake, but unimportant so far as basic policy is concerned. The attention these matters are receiving is out of all proportion to their true significance.

So far as general practice is concerned the crux of the problem is how to convert it from a "non-contemporaneous contemporaneity" into something truly contemporary in both design and function.

Michigan Salmonella Center

The Division of Laboratories of the Michigan State Department of Health has been designated as a Regional Salmonella Center, the fourth in the United States, to collaborate with the World Salmonella Center at Copenhagen, Denmark. It will thus accept for identification cultures of Salmonella-like bacteria from all over the Middle West. Arnold Juenker, bacteriologist of the State Health Department, is in charge of the center under the direction of W. H. Ferguson, Ph.D., the department's coördinating bacteriologist. Other Salmonella Centers in the United States are in the Atlanta (Georgia) Communicable Disease Center of the Public Health Service, the New York City Health Department and the New York State Laboratories in Albany.

Health—Twenty Years Late

A Case-Study in Public Administration

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THE constant work of twenty years by many interested citizens and organizations finally has culminated in the development of a modern health department for the City of Denver. The record of their efforts is a story of interest to community leaders desirous of modernizing their health structure in the face of apathy, political opposition, and lack of knowledge and understanding of what a good health department can contribute to the welfare of the community.

In 1916, the people of Denver adopted an amendment to their charter giving them a highly centralized, strong mayor form of government. The charter provided for a quadrennial, non-partisan, mayoralty election and a plurality was sufficient to elect. Managers of the four main divisions of city government served at the pleasure of the Mayor. This amendment also provided for a Department of Health and Charity managed by a physician. A 1927 code revision, however, specified no qualifications for the Manager, and since that time, the individuals holding that office were appointed without regard for public health qualifications.

Until the advent of the present administration in 1947, the former mayor served for a period of five terms. Although a man of unquestioned political astuteness, his apparent lack of interest, knowledge, or concern for an adequate health department is one of those inexplicable phenomena of municipal government. His administration employed, on two occasions, trained health officers for short successive periods, responsible to the lay Manager of Health and Charity.

Perhaps the administration was more interested in perpetuating itself in office than in giving health service. This was suggested by the application form which the prospective employee of the health department was required to fill out. Among other pertinent questions asked, in bold type, were found the following:

> What is your political party?
> Did you participate in the recent campaign?
> If yes, state what work you did. In what precinct?

The manager of Health and Charity was responsible for the obvious duties implied in the name of the department. In addition he was the Director of Denver General Hospital and the County Farm, served as Coroner, was responsible for garbage collection, and on occasion, served subpoenas.

Real public criticism of the department seems to have started in 1926 when the Denver Chamber of Commerce complained bitterly about the inadequate tuberculosis program and the vicious aftercare meted out to patients discharged from the tuberculosis ward of Denver General Hospital. A 300 bed tuberculosis hospital was recommended at that time, a need that is still unmet. Although interested citizens

supported this proposal, nothing came of it.

In 1927, a voluntary Denver Public Health Council was formed. It surveyed the situation with the technical assistance of the staff of the Committee on Administrative Practice of the American Public Health Association, and published the report "An Appraisal of Public Health Activities in Denver, Colorado."[1] The recommendations made in this report were not yet implemented twenty years later when the administration was finally voted out of office.

In 1938, a Harvard medical student and resident of Denver[2] made another survey which was not as extensive nor as authoritative as the one published nine years before, but came to the same general conclusions as to the ineffectiveness of the municipal health program.

In 1938 the Denver Public Health Council initiated an amendment to the city charter designed to split the Department of Health and Charity and establish a merit system in both departments. This proposal generated much heat and little light. It was opposed vigorously by the administration. The motives of the sponsors were impugned and the proposal became enmeshed in the complex problems of Old Age Pensions. The issue of health was therefore not clear-cut and the amendment was defeated in the municipal election of 1939.

In 1943, a citizens' group with expert consultation[3] from the U. S. Public Health Service and other agencies issued a report which was in essential agreement with the reports previously made. Little attempt was made to publicize or implement its recommendations. As the situation smouldered along, pot shots were frequently taken at the health department by interested citizens.

The now well known public health report by Carl Buck, Dr.P.H.,[4] in 1946 concerning Colorado, and the consequences thereof, resulting from the brilliant work of Dr. Florence Sabin and her committee, again emphasized the seriousness of the Denver problem, but their triumph did not affect the municipal situation, as Denver is a home-rule city.

A series of events then took place which resulted in a phenomenon rarely seen in public health. The health department of a city of 375,000 people was completely junked; a new one along modern lines created, and other changes made that will have a profound bearing on the improvement of the health of the city and the whole Rocky Mountain Region.

In 1946, an organization known as the Denver Unity Council at its annual meeting sponsored a health section. It happened that a city councilman was a member of the health panel. In the audience sat the Manager of Health and Charity and members of the press. The Health Department failings were again enumerated and a demand made for a health survey of Denver by an impartial authority similar to the one recently completed by Dr. Carl Buck for the State of Colorado. The press gave this item wide coverage and asked the administration exactly what it intended to do about it.

Fortunately, the issue raised at this meeting was kept alive by a local citizen, a practising attorney, who was at that time president of the Denver Tuberculosis Society. Because an election was approaching and the press gave full coverage to the controversy, the Mayor finally agreed, and selected Edward McGavran, M.D., M.P.H., at present Dean of the School of Public Health at the University of North Carolina, to make the survey. Together with an excellent committee appointed by the Mayor, he set to work. It was decided that the job was too extensive for one man, and a group of consultants was selected to help. Health was one of the major issues of the campaign in the city election

which took place after the completion of the survey, but prior to the issuance of the report. The victor and present Mayor unequivocally pledged himself to implement the recommendations that would be made by the survey staff. Two months after the new administration took office, the report[5] was handed to the Mayor, immediately released to the press, and the surveyor specifically invited to return in 1950 to re-survey and report to the people of Denver whether his recommendations and those of his consultants actually had been implemented. The 304 page McGavran report indicates the type of health department that Denver citizens had been striving to improve over a 20 year period. In this report Denver's progress up to the year 1947 is summarized in the following statement:

> That Denver does not have a good local health department is too obvious to warrant comment. It might be truthfully said that Denver does not have a health department at all in the commonly accepted sense of the term.

The report contains lengthy criticisms of many obvious faults of the structure of the health services as they were at that time. The Health Department had no central office, was not listed in the telephone book, and did not appear anywhere in the annual publication of the city auditor. Three small cramped rooms at the end of a long corridor in the county hospital comprised the Health Department quarters. There was no professional leadership, program, organization, or channels of authority. The scattered personnel of the Health Department in different basements and clinics had never met together to plan for better health. There was no civil service or merit system. All Health Department employees were political employees whose training and experience were totally inadequate and substandard. There was no overall medical, nursing, or engineering supervision, a lack that could not be duplicated in any city of comparable size in the United States. There were no full-time medical personnel in the Health Department, qualified or unqualified. Salaries and travel allowances were low and inadequate. The inadequate budget was saddled with non-health department expenses at every turn and had no relation to functional organization.

Dr. McGavran went on to discuss the various divisions in detail. Vital statistics processed certificates but never compiled any data. It needed more space, a fire-proof vault, and an adding machine! The Communicable Disease Control Division had two clerks and no supervision. Tuberculosis case finding was at a very low level. The administrative confusion in the Venereal Disease Clinic was unbelievable. The Environmental Sanitation Division was grossly inadequate. The Health Department had no division of maternal and child health, health education, dental hygiene, adult hygiene, industrial hygiene, or mental hygiene. Furthermore, there were no programs in any of these fields. There was no organized, generalized public health nursing, only certain limited specialized activities in tuberculosis and venereal disease control. Communicable disease control was a function of the Denver Visiting Nurses Association. Three separate health laboratories for diphtheria, water and milk, as well as city hospital laboratories, were carried on the Health Department budget.

The hospital was carefully surveyed by two consultants. They found so much to criticise that it is impossible to summarize briefly their findings. They made fifty-six important recommendations for improvements. The report states that "In an organization sense, it may be said that the hospital does not exist. There is widespread evidence that employees do not know to whom they are responsible or what persons are responsible to them."

These criticisms of the Health Department were implemented by a series of charts comparing Denver's health record to that of fifteen other cities selected because of similarities to Denver in population, age composition, race and color. Denver ranked next to the bottom or at the bottom in general death rate, in tuberculosis mortality, in the percentage of deaths from respiratory tuberculosis not occurring in hospitals, in diarrhea and enteritis mortality for all ages, in infant mortality and in percentage of births not occurring in hospitals. It was fifth in deaths from scarlet fever, whooping cough and diphtheria and in the number of cases of syphilis and gonorrhea reported. The follow-up of sources and contacts for the venereal infections was extremely poor. On the basis of the American Public Health Association *Evaluation Schedule,* Denver ranked high in water supply and excreta disposal, both non-health department functions. Otherwise the department ranked fair in five categories and poor in ten.

On assuming office the new Mayor promptly persuaded a local physician to accept the cabinet position of Manager of Health and Charity for a term of 6 months to accomplish the needed reorganization. An internist, this cabinet officer had been instrumental in helping to work out the successful revision of the state health laws a year previously and had the complete coöperation of the local medical society, the state university School of Medicine, and lay health organizations in the community.

The Manager of Health and Charity was able to obtain the services of the head of the Department of Public Health and Preventive Medicine of the local medical school on a one year's leave of absence, to act as Health Officer of the city. There had been no Board of Health for many years; the Mayor, at the request of the Manager, appointed an Interim Board of Health consisting of two physicians and three laymen.

Qualified directors were obtained for the following divisions: Communicable Disease, Health Education, Tuberculosis, Public Health Nursing, Maternal and Child Health, Sanitation, and Venereal Disease. The first Director of Health Education was on loan from the Public Health Service. These division directors were instructed to reorganize their divisions, employ competent assistants within budgetary limitations, rid their departments of incompetent employees, and launch their programs, giving priority to the most pressing problems as revealed by the survey and their own investigations. These departmental activities were coördinated and frequent staff meetings were held so that all might be informed concerning the rapidly expanding program. It seems unnecessary to detail the multitudinous changes that were made or the various programs that were launched since they were the classical ones known to all good health departments. There were, however, some unusual features that merit discussion in some detail.

The Vital Statistics Division had no firm foundation in that it merely duplicated records for the state and provided very little statistical information for the use of the city. After consultation with the Public Health Service a plan was worked out with the State Health Department merging the Vital Statistics Division of the Health Department of the City and County with the Records and Statistics Section of the State Department of Public Health. This involved the setting up of the Vital Statistics Division of the City and County in the State Office Building, saving the city several thousand dollars. It enabled Denver to obtain complete vital statistics information and facilitated the filing of complete, accurate, and timely records, avoided duplication, and made possible the current release of health statistics and the interpretation of

records and data to meet the needs of the health officer and division directors. The Health Department made available certain office and mechanical equipment which remained its property. Under mutual agreement, the office may be dissolved upon 90 days' notice by either of the contracting parties.

The new Director of the Sanitation Division inherited a large group of untrained inspectors, many of them willing but unable to do the work that needed to be done. Various sections were created under competent qualified personnel and a long intensive inservice training course was launched. It soon became apparent who the interested men were. These men were retained and their salaries raised.

This department was also charged with the supervision of garbage collection, an activity carried out by a private contractor who sold the garbage to hog growers. Garbage collection and disposal had been a source of much dissatisfaction to the citizens of Denver. Great improvements were quickly achieved by working with the collectors. This system of garbage collection can be made to work with reasonable satisfaction, saving large sums of money for the taxpayer.

The survey recommended an amalgamation between the Visiting Nurse Association and the Health Department. This was finally achieved, with a contract between the two patterned after that of Seattle,[6] and resulted in a division of Public Health Nursing of the Health Department known as the Visiting Nurse Service. The staff of this service combines in a generalized program public health nursing and bedside care.

The Coroner's Office is rarely a part of health department structure. Consideration was given to placing this function in the Police Department or the District Attorney's Office. A careful study of the situation led to the recommendation that its form be modified and that it be left in the Health Department. It was recommended that the Coroner's system be replaced by the Medical Examiner's system. Consequently, the Denver Health Department now has as a part of its structure the office of Medical Examiner. This office, under the direction of a qualified pathologist with training in legal medicine, not only performs the functions of Medical Examiner but also supervises the pathological and clinical laboratory work for the Denver General Hospital and operates a program for the training of residents in pathology.

As has already been indicated, at the time of the survey the budget was drawn in such a way and contained so many non-health items, that it was impossible to determine how much money was actually being spent for health. A good guess would be something under 50 cents per capita, expended so poorly that it is doubtful that the people of Denver were receiving even 25 cents worth of effective health service per capita. The annual appropriation from city sources is now over $1 per capita; in addition approximately 20 cents per capita is being contributed by the Visiting Nurses Association Board from its own and Community Chest funds. This is not enough for even a minimal health department, but it is remarkable progress in a period of less than 2 years.

The city's hospitals previously comprised four separate units: the Denver General, the County Farm, a hospital for contagious disease, and the Detention Home. It developed that the Detention Home was by charter under the authority of the Juvenile Court and in no way responsible to the Department of Health and Charity. Therefore, the administration of the Detention Home, together with all its remaining funds, was turned over to the Juvenile Court.

A trained medical administrator was appointed as Medical Director of city hospitals. For the first time, the hospital for contagious disease and the County

Farm have been classified as departmental units under the Department of Hospitals. A reorganization of the departmental units within the city hospital system on a functional basis has been accomplished.

At the Manager's request, the Public Health Service made a survey of the immediate and long-term architectural needs of the city hospital buildings. The survey report was referred to the Mayor, the City Council, and to the public. The imperative features with regard to immediate fire protection were fulfilled with the coöperation of the City Fire Department, and completion of recommendations concerning fire hazards is under way.

Other cities have discovered that close association with a medical school serves to maintain a high quality of service to patients in municipal hospitals. Accordingly an agreement was entered into with the Regents of the University of Colorado establishing the City Hospital as a teaching hospital of that University's Medical Center. Under the terms of the agreement, staff appointments at the city hospital are available only to members of the medical faculty at the university, and in return the clinical facilities of the city hospital are extended to the university for teaching purposes. It is believed that this will stabilize the care of patients at a level of quality which will not be seriously upset by internal changes in city government. It is also undoubtedly true that a closer teaching affiliation will in general improve the intern and residency programs at the city hospital.

A survey of the professional care rendered by nurses to patients as well as the operation of the nurses' training school at the city hospital, was requested and obtained from the Public Health Service.

After studying the results of the survey, it seemed wise to abandon a hospital training school for nurses and make available the clinical possibilities for nurses' training to the School of Nursing of the State University. Agreements were completed for such an affiliation.

What has been eliminated is fully as important as what has been added. The most important elimination has been the employment of personnel on a patronage basis. The policy of the present administration is to employ personnel on the basis of their qualifications and experience and not on the basis of political qualifications. Functions such as licensing have been turned over to another department, and the Health Department exercises control through a system of permits.

The reader should not infer that the ultimate goal for public health in Denver has been achieved. Progress requires continuing change and improvement and the Denver Health Department has a long, hard road ahead.

It is believed that the Department of Health and Charity should be split into at least two separate and distinct organizations, one having health, and the other having welfare responsibilities.

The department that has been created should have full charter authorization and not depend for its success, as it now does, on the wishes of a mayor who may not always, as in this instance, be devoted to the principles of efficient government. The Board of Health, which exists because the administration wishes it to exercise functions delegated to it by the Manager of Health and Charity, must have such delegation of authority made permanent by legislation, if it is to survive indefinitely.

After floundering around for 20 years, Denver found that it had the necessary leadership to solve its serious public health problems right within its own community, although it was found desirable to call upon outside consultants for help. In effect, the problem was a health department under lay political management. The solution was to put

the department under competent professional public health management.

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I.I.A.A. Staff Changes

The Institute of Inter-American Affairs which is under the U. S. Department of State, Washington, D. C., has announced the appointment of H. van Zile Hyde, M.D., as Director of its Division of Health and Sanitation, succeeding Clarence I. Sterling, Jr., Sanitary Engineer, who has returned to the Massachusetts State Department of Public Health to become Director of the Division of Sanitary Engineering and Deputy Commissioner of Health for Environmental Sanitation.

Dr. Hyde was expected to assume his new duties on February 15 on assignment from the Public Health Service where he has been a medical officer since 1941. Dr. Hyde has been Assistant Chief of the Division of International Health of the U.S.P.H.S., Health Adviser to the Division of United Nations Economic and Social Affairs of the Department of State, and has served as the United States representative on both the Executive Board of the World Health Organization and the Executive Committee of the Pan American Sanitary Organization. In his new post he will continue to represent the United States in these two international agencies.

In the field of health and sanitation, the Institute of Inter-American Affairs is currently carrying on coöperative programs with fourteen of the Latin American republics. Activities under these programs include the operation of health centers in low income areas, design and construction of water supply and sewerage systems, control of malaria and other endemic diseases, hospital facilities and services, health education and training of personnel.

Significance of UNICEF's Role in International Child Health Activities

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BEFORE entering into a discussion of child health activities in which the International Children's Emergency Fund (UNICEF) has played an important role, a brief description of the origin and purpose of this organization may serve as useful information to the readers.

After the war, physical devastation and economic dislocation prevented many countries from adequately taking care of the needs of their children. With the help of the United Nations Relief and Rehabilitation Administration (UNRRA), a number of countries were able to provide supplementary meals consisting of special protective foods to a minority of their children. In 1946 UNRRA activities came to an end. The needs of millions of children, however, were still unmet.

The reason special attention needed to be given to the children grew out of the nature of the food problem left by the war. Many countries had to concentrate their first effort in restoring agricultural production on staples, such as grains and potatoes. To provide an adequate supply of the special protective foods, such as milk, fats, meats, cod liver oil, needed by children and nursing and pregnant women, was almost impossible. The number of milking cows had been depleted and the yield of the remainder had been reduced. At the end of 1946, milk production in a number of countries of Eastern and Central Europe stood at only 50 to 70 per cent of the pre-war level—a shortage that was particularly serious in terms of child health. The shortage of livestock also resulted in a serious shortage in both shoes and soap. At the same time, warm clothing, diapers, medical supplies, and fundamental equipment for children's hospitals and institutions were urgently needed.

Surveys made in 1946 and the early part of 1947 indicated an abnormally high infant mortality. In some famine areas that winter, half of the live born babies died in their first year of life. Maternal malnutrition, moreover, had led to a fall in the average weight of new-borns and to an increase in premature babies and stillbirths. Tuberculosis had reached abnormally high figures; rickets had attained a degree of severity; dental decay and skin diseases were prevalent; and syphilitic infection, especially among young mothers, was high in countries that had suffered invasion.

In the face of this serious situation there could be no question that, in the countries that had suffered from war devastation, the health of children was dependent upon whatever measures could be organized by the nations of the world.

The Fifth Session of the Council of UNRRA, in August, 1946, decided to apply to a Children's Fund the residual assets of that organization. UNICEF itself was formally established by a resolution of the General Assembly of

the United Nations in December, 1946. The next months were taken in getting an organization together, raising substantial contributions, and procurement and shipment of supplies. By December, 1947, operations had really begun for some 375,000 children in six countries. Since then the programs have progressively expanded; at the present time some 5,500,000 children and mothers are receiving a daily food supplement.

UNICEF is part of the United Nations Secretariat. Its policies are laid down by a 26 nation Executive Board in accordance with such principles as may be established by the Economic and Social Council of the United Nations and its Social Commission. Headquarters are in New York City and regional offices have been established in Europe, China, and the Southwest Pacific. Small international missions are set up in each of the countries in which UNICEF is operating.

As of October, 1949, contributions to the Children's Fund, which are voluntary, had reached a figure of $133,600,000. Of that amount practically all has already been allocated for various types of programs. Included is a medical program for which approximately $10,760,000 has been firmly committed. If potential medical expenditure is included, the allocation on medical items totals $21,500,000, or approximately 20 per cent of all moneys so far allocated for supplies and services.

The various types of medical and health programs to which UNICEF is giving assistance are briefly described, as follows:

BCG VACCINATION

UNICEF has allocated over $5,000,000 for BCG vaccination of children. In 1946, the Danish Red Cross and its associates, the Swedish Red Cross and Norwegian Relief for Europe, had started a demonstration of this type of vaccination in Europe. For the purpose of extending the work into a mass campaign, UNICEF and the Danish Red Cross established a Joint Enterprise in March, 1948. The Danish Red Cross, with Dr. Johannes Holm as its director, is responsible for the technical direction of the campaigns. A research unit has been established by the World Health Organization (WHO) for the analysis of the statistical and epidemiological data resulting from the campaign.

BCG vaccination protects the child by reducing the likelihood of infection by about 80 per cent. Twenty-four countries have already been approved for campaigns. In Europe, tuberculin tests will, it is estimated, be given to 50,000,000 children and young adults. By the end of September, 1949, a total of 17,500,000 persons were tested and 8,000,000 vaccinated in Austria, Czechoslovakia, Finland, Greece, Hungary, Poland, and Yugoslavia. Campaigns have also been started in Italy; Algeria, Morocco, and Tunisia; and India and Ceylon. Plans are ready for Pakistan and Middle East countries. It is expected that before long the work will be extended to East Asia and to a number of Latin American countries.

This campaign is history's largest mass immunization. The wide geographical coverage, the large numbers tested and vaccinated, and the uniformity of procedures and materials used in the campaign make it unique. In almost all the participating countries, mass tuberculin-testing and BCG vaccination are being carried out for the first time. As local personnel is trained and local vaccine production centers are established, the countries will be able to carry on these programs without outside help.

Another feature of the BCG vaccination program is that it is really an international enterprise, in every sense, and on a practical day-to-day working basis. As of June 1, 1949, 150 Scandinavian and French doctors and nurses and more

than 350 national medical personnel have been at work in the campaign in the countries of Europe and Asia and North Africa. The funds, personnel, and supplies came from many organizations and many countries. Danes work with Greeks; Norwegians with Poles; Swedes with Austrians. Meanwhile, French medical workers are serving in North Africa, and doctors from Algeria, Morocco, Tunisia, Italy and other countries have been welcomed to Czechoslovakia in order to see the campaign in progress. As the work gets under way elsewhere in the world, this same kind of interchange of experience will be effected.

VD CONTROL

UNICEF has allocated funds for the provision of penicillin and other medical supplies to treat pregnant women and congenitally syphilitic children. In all assisted countries, the government bears the full cost of a campaign conducted simultaneously for the diagnosis and treatment of the rest of the adult population. In accordance with recommendations of the WHO Expert Committee on Venereal Diseases, UNICEF supplies are provided (1) as part of an overall venereal disease campaign where the introduction of penicillin treatment stimulates and expands control work into a mass attack on the disease; (2) where a particular section of population is involved and a special endemic problem may exist; and (3) where pilot demonstrations in a limited number of clinics and hospitals can be established and where facilities for teaching and training exist. Assistance has so far been provided to seven countries: Bulgaria, Czechoslovakia, Finland, Hungary, Italy, Poland, and Yugoslavia.

The campaign now conducted in Poland is an especially extensive and effective one. The situation has changed considerably for the better since this campaign was undertaken, according to a report by Dr. Jerzy Suchanek. Previously 150,000 syphilis infections a year were reported and attendance at the VD clinics was poor. An enormous shortage existed in medical equipment and drugs. During 1948, the first year of the new campaign, 159,000 cases were treated, of whom 78,000 were pregnant women and nursing mothers, and 5,600 were children and adolescents with congenital and acquired syphilis. They were treated by the old method of As-Bi and also with penicillin. In the first quarter of 1949, another 27,000 cases were treated. During this period, 1,000,000 persons were reached through a mass screen examination with Chediak slide-tests, and among them 21,773 positives were found. Among 24,000 contacts notified, 14,000 cases were discovered. Almost 1,000 VD clinics were established and 3,500 beds were made available for receiving patients. Four hundred thirty-five physicians were trained in 27 special courses for instruction in conducting extensive campaigns.

WHO has assisted the participating countries in the development of their plans of operation and has assumed responsibility for technical follow-up and evaluation. Specialists of various assisted countries have been given opportunity for brief observation in the latest techniques in penicillin therapy. This kind of training is being arranged by WHO for UNICEF. In addition to the specialists in European countries, experts from the United States, namely, Dr. J. F. Mahoney, Dr. E. W. Thomas, and Dr. J. H. Lade, have been invited by WHO to lecture in Europe on the new methods of treatment and to render other assistance in organizing the campaigns.

AID FOR ANTI-MALARIA CAMPAIGNS

The Executive Board of UNICEF, in July, 1948, allocated $300,000 for regional malaria control demonstrations in Asia and the Far East. In a survey

made on behalf of UNICEF earlier that same year by Dr. Thomas Parran, former Surgeon General of the U. S. Public Health Service, and Dr. C. K. Lakshmanan, Director of the All India Institute of Hygiene, it was pointed out that in that part of the world malaria was an important cause of death among children but that DDT made its control possible through economically feasible methods. However, so the report further brought out, authorities in many places were handicapped in developing control programs both by lack of knowledge of new methods and by their inability to import the necessary equipment and materials.

UNICEF'S part in these malaria control programs consists largely in providing supplies and equipment. The governments bear local costs of the projects and make local personnel available for training and, in addition, continue demonstrations which have proved successful. Planning for the control projects was undertaken by WHO Expert Committee on Malaria in October, 1948. Since March, 1949, technical follow-up has been carried forward in the field by the WHO malariologist assigned to the UNICEF Far East Headquarters. Sites for projected malaria programs are decided upon in consultation with the Food and Agricultural Organization (FAO) of the United Nations in order that an increase of food production can go hand in hand with an improvement in the health of the populace. Six malaria demonstration teams have started work in India, Pakistan, and Thailand. Plans for other countries are under study.

In Europe UNICEF is providing DDT, sprayers and other supplies, and transportation facilities to Bulgaria, Hungary, Rumania, Yugoslavia and likewise in Palestine and its neighboring areas, where antimalaria and insect control programs are in operation. At the invitation of WHO, Dr. Alberto Missiroli of the *Instituto Superiore de Sanita* in Rome and other specialists are visiting countries interested in the campaign in order to help them develop programs. In Italy, the results accomplished by malaria control using DDT spraying in the last three years are really outstanding. Only 4 deaths from malaria were reported in 1948. In addition to the effective control of mosquitoes in these areas, flies are being got rid of, with a subsequent reduction in fly-borne diseases. The DDT campaign, according to a study made by Dr. Missiroli, has brought about a reduction in mortality that brings the rate for the treated area in line with the rate in the healthiest countries of Europe. The decline in the mortality rate is particularly marked in the number of infant deaths due to diarrhea.

STREPTOMYCIN

Since its discovery in January, 1944, streptomycin has been subjected to intensive experimental and clinical investigation. The Sub-Committee on Streptomycin of the Expert Committee on Tuberculosis of the WHO, meeting in New York City in July, 1948, made extensive studies on the use of streptomycin in clinical tuberculosis, and in conclusion announced that this new antibacterial agent exerts a beneficial therapeutic effect on several forms of tuberculosis. In line with that opinion, UNICEF has given some $300,000 worth of streptomycin to eight European countries; namely, Bulgaria, Czechoslovakia, Finland, Greece, Hungary, Poland, Rumania, and Yugoslavia. The streptomycin is provided in accordance with technical conditions laid down by the WHO Sub-Committee on Streptomycin. Special centers are established by governments for demonstrations in the use of streptomycin in the treatment of children with miliary tuberculosis and tuberculous meningitis. Periods of brief training sponsored jointly by WHO and

UNICEF for clinicians engaging in these programs are given at the centers in London and Paris. Technical consultations are being given by a WHO expert to the assisted countries. Reports from these centers have been very encouraging. Results and evaluations of these clinical experiences will no doubt throw some further light on the value of this antibiotic.

OTHER ASSISTANCE

Besides combating the above mentioned diseases, UNICEF has also contributed niacin for pellagra and diphtheria antitoxin for programs in Rumania. Equipment and medical supplies for combating mycosis have been sent to Yugoslavia. Plans for yaws control are being developed by WHO experts for a number of countries in the Far East and Central and South America, and for these undertakings UNICEF will supply penicillin and other necessary medical supplies and transport. UNICEF has also provided equipment for an orthopedic program for Bulgaria and for the care of premature babies in France and for child health centers in Yugoslavia.

CHILD CARE TRAINING PROGRAM

Trained personnel is the key to success in carrying out child health and welfare programs in countries requesting UNICEF's assistance. In 1948, and again in 1949, UNICEF, in coöperation with the governments of France, Switzerland and Sweden and with technical guidance from WHO, offered training opportunities to 274 pediatricians, public health officers, social workers, nurses, teachers, psychologists, psychiatrists, directors of children's institutions, and architects specializing in hospital construction. Similarly, the United Kingdom is offering a course. Those receiving this training are mainly from UNICEF-assisted countries in Europe and the Far East, although this year the opportunity was also extended to specialists from fourteen Latin American countries.

As a further step, the French Government has put forward a scheme for establishment of an international children's center in Paris, and this proposal is now under consideration by UNICEF, WHO, and other United Nations agencies. The main purposes of such a center would be (1) to provide doctors and their associates with special training; (2) to undertake scientific research and investigations concerning child problems; (3) to make known the work carried out in this field by the various participating countries; and (4) to provide the widest possible public information on hygiene and preventive medicine as they bear upon child health.

No less important than the training opportunities provided for children's specialists, is the training UNICEF is making possible at the local level, for such training is vital in developing child health activities. In North China a basic training program for public health workers is being carried out by Dr. Leo Eloesser, a WHO expert who is in charge of the Fund's program in China.

Plans for child health training and demonstration centers for the Far Eastern countries are being formulated jointly by UNICEF, which contributes supplies, and WHO, which offers technical assistance. These demonstration centers will no doubt have a permanent value in the training of local personnel and in demonstrating techniques adaptable to local conditions.

EMERGENCY PROGRAMS

In order to meet the emergency situation in the Middle East, UNICEF provided medical supplies valued at $353,000 for about 940,000 refugees in the Palestine area. Antimalaria and anti-fly campaigns were begun in the middle of April of 1949 under the supervision of Dr. J. D. Cottrell of WHO, Advisor to UNICEF. DDT and other medical sup-

plies have been rushed to the spots to combat epidemics and to improve sanitary conditions in the camps.

Following the earthquake in Ecuador in August, UNICEF earmarked $200,000 to provide milk, blankets, and other supplies for 40,000 children affected by this disaster.

COÖPERATION WITH OTHER UNITED NATIONS AGENCIES

In summing up UNICEF's contributions to international child health activities, one significant feature in this enterprise needs to be stressed, and that is, the close coöperation of a number of international agencies that has been effected in the planning, operating, and administration of the various projects. FAO has assisted in problems dealing with feeding and nutrition. The Department of Social Affairs of the United Nations Secretariat has given advice on child welfare matters. A Joint Committee of UNICEF and WHO on Health Policy brings together the views of WHO and UNICEF on all UNICEF material assistance in the field of child health. In the carrying out of these agreed-upon projects UNICEF contributes imported supplies for all medical and health projects to the needy mothers and children. WHO, in its role, (1) designates the types of child health programs worthy of UNICEF assistance; (2) provides experts to governments, upon their request, to survey specific needs, prepares requests to UNICEF, and develops "plans of operation" for the proposed program; and (3) provides experts to assist in the implementation of the UNICEF programs. Under this procedure these two international organizations have already contributed a great deal in stimulating the development of child health activities in many countries in the world.

As a still further development, the WHO Expert Committee on Maternity and Child Health has recommended that UNICEF undertake to provide certain supplies and equipment needed for a variety of child health and child welfare services. UNICEF would make such provision in accord with recommendations of maternity and child health specialists from WHO, after discussion with countries requesting such assistance. Included in this supply program would be maternal and infant and preschool centers; school health services; dental and immunization services; services for handicapped children; child guidance clinics; maternity and children's hospitals; provision for the care of premature babies; and provision for training programs in child welfare

Investigation of the Smog Incident in Donora, Pa., and Vicinity*

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PERHAPS some of you have belonged to an organization which was at some period in its history thrown suddenly into a big job that not only offered a great challenge by its importance, but also strained every resource of that organization and at the same time was of such public interest that every step of the way was made under a searching public scrutiny and often in the midst of much controversy.

Such has been the year-long investigation by the Division of Industrial Hygiene of the Public Health Service into the smog episode that occurred last fall in the town of Donora, Pa.

I hope some of you have had a chance to glance at the report which we issued two weeks ago—as monumental in size as it is. But even if you have only read some of the newspaper stories on the results and recommendations of the study which appeared at the time of release, I am sure you will recognize that the assertions I made above are not exaggeration. The Donora study was the most intensive and exhaustive study ever made in this country on air pollution, and probably the most intensive effort ever undertaken by the Division of Industrial Hygiene.

I believe that our study is of special interest to this group because it represents the first time in the history of industrial hygiene in the Public Health Service that a complete and thorough epidemiological study has been made of a particular air pollution problem, and also the first time that almost every segment of our varied industrial hygiene staff has been drawn into such a major effort. Not only did we bring into the long study our own physicians, nurses, medical technicians, veterinarians, and statisticians to join forces with our own engineers and chemists, but we brought in from other parts of the Public Health Service sanitarians, housing inspectors, and other specialists. And, on top of all these, we worked in coöperation with technicians from the U. S. Weather Bureau who made the meteorological investigations.

There were 25 people in the team that went into the town of Donora, and that number was augmented by additional chemists helping back at our laboratories in Washington. Almost every other effort that our division had been working on was put aside to furnish the necessary personnel, equipment, and laboratory facilities for the investigation into what happened at Donora.

Let me give you a quick picture of the situation as we found it when we began the study. Donora is a steel mill town of some 13,000 residents, sitting on a hillside on an inside curve of the Monongahela River 30 miles southeast of Pittsburgh. Donora and the small community of Webster on the other side of the river are both backed by hills

* Presented at a Joint Session of the American School Health Association and the Engineering, Epidemiology, Industrial Hygiene, and School Health Sections of the American Public Health Association at the Seventy-seventh Annual Meeting in New York, N. Y., October 28, 1949.

that rise some 400 feet above the river level. The curve of the river and the hills form a natural bowl which can—and did in this instance—lead to the bottling up of air on the valley floor for lengthy spells. The three plants of the big steel mill manufacture steel, wire, and zinc products, and almost all of the working population of both towns are employed at the mill, which operates on a 24 hour basis.

River traffic, largely coal from the coal fields to the mills in Pittsburgh, at this point on the Monongahela ranks in terms of tonnage with the highest in the world. From the considerable number of railroad trains, both through trains and local ones inside the yards, and the homes, and stores of the town which also burn coal, there is contributed a sizable amount of smoke and air pollution in the little valley, on top of the tremendous load emerging from all of the stacks of the three plants on the river bank.

"Smogs," as we have come to call them, are nothing new to Donora. They come often in the fall and spring, and usually last a day or so, until winds coming from one or the other end of the valley—or across the hills on either side—blow it away. I am sure that you are by now familiar with the phenomenon of smog—caused by a weather inversion, which occurs when a layer of warm air comes in over the layer of ground air, and prevents the ground air from rising in its usual fashion and being replaced on the ground by other new air.

It was that familiarity with smog in Donora which prevented the people of the town from suspecting anything unusual when a smog blanketed the town on a Wednesday of the last week in October of 1948. It was the smog season. But this one stayed longer than usual and became worse than usual. And the longer the blanket kept the air bottled up, the heavier became the concentration of contaminants in that stable air. The first death occurred about 2 A.M. Saturday morning. By late Saturday night 17 deaths had occurred and hundreds were very sick. On Sunday afternoon the rain came, and shortly thereafter the smog went away; but by this time the town was thoroughly scared and they had no scientific knowledge to tell them whether or not the smog was gone for good.

The town council of Donora was desperately anxious to take steps, but they had no idea how to fight this new and unidentifiable menace. They called for officials of the State Health Department and asked for emergency aid for the sick, but there was little else that could be done. And while the smog had disappeared, hundreds were still sick and there was no way of knowing when the smog might return.

This was the atmosphere into which our men walked the following week for a preliminary survey. And some time later, when the full team of varied technicians moved into Donora to study every possible angle of the episode, there was still a great deal of apprehension on the part of the townspeople that there would be a return of this danger which they could not name or understand.

The team had two main objectives—to find out precisely what caused the deaths, and to establish ways and means of preventing future tragedies of this kind. As you know, the year of study has shown that it was probably a combination of substances, rather than a single one, that was responsible for the trouble. As for the second objective, the report makes a number of specific recommendations which I think it is safe to say should insure that another such incident can never occur again.

When the survey team arrived in Donora it was given quarters in the municipal building and offered every assistance. Considerable publicity in the local newspaper was given the ar-

rival of the team and its job, and this knowledge on the part of the townspeople made our job much easier in the ensuing months. So the team of 25 varied technicians set out to do this job which was very urgent, highly complex, and yet completely new to every one of them—and I might add in a strange town in the dead of winter.

The nurses—five of them—set out to visit one-third of all the homes in the two towns, with the intention of getting a complete record of all illnesses or affections in each family during the smog. Only two cars were available for them, so for the others it meant tramping up and down the icy streets of the town day after day. And they could not be satisfied with the first third of the homes they came to. Each home on their calling lists was selected from a map, so that an accurate cross-sampling would be the result. The newspaper stories had paved the way so that the occupants in most homes understood what was wanted of them—and were very coöperative.

At the same time the physicians were interviewing a selected group of persons who had been definitely ill during the smog. These interviews were conducted in an office, and posed a number of problems which were also common to the nurses.

The first difficulty was the language factor. A good part of the population was of Slavic descent and not especially facile with English. In many cases an interpreter was necessary.

Even more important was the psychological factor. Many of the residents, fearful of the wrath of the plant in which they worked—which, of course, everyone was blaming informally at that point—actually minimized the illnesses they had suffered during the smog. Others, who were more angry than afraid, made the most of their illnesses and probably exaggerated. Often the vehemence and obvious resentment or the fearful restraint of these persons gave the interviewer a hint of their feelings. At other times, however, it was necessary to go into lengthy circumspect questioning to establish the facts.

On top of all this was the fact that this was going into weeks and eventually months after the smog episode, and there was the faultiness of the human memory to take into account. The nurses and physicians worked as fast as they could, and they gained experience as they went along in ways to do things faster and more efficiently, but still there were only a few of them and much to be done.

As a vital part of the medical investigation, a number of autopsies of the deceased persons had been planned. Yet because of prejudices and red tape it took several months of repeated visits to relatives, clergy, and cemetery officials before our physicians finally obtained all the permissions necessary to do autopsies on three of the fatal cases.

That was not all. The fear that was still present in the minds of some residents gave the survey an urgency that nothing else did. One person insisted on presenting her theory time and time again that the cause of the smog deaths was "poison dropped from airplanes flying over."

Throughout the study the team also got a good deal of varied advice from visiting experts. Several of these came to Donora from a perfectly natural interest in the situation, spent a couple of days looking around, and proceeded to tell the newspapers their conclusions. Then they left town, and the members of the team had to answer questions from the townspeople about the newspaper stories.

All of these difficulties were human factors, however, which our people were able to overcome by patience and with the knowledge that they would in time disappear. But you may be interested also in some of the technical difficulties which faced the engineering phase of the study.

To begin with, the Weather Bureau study was an extensive one, and called for close coöperation with the engineers who were studying the amounts of substances going into the air of the valley from the plants, homes, and other sources. This was the first time that our engineers had ever worked so closely with weather men, and both sides found it a real challenge. The weather men set up 11 stations in various parts of the little valley, and the engineers were at the same time taking air samples at almost the same number of stations in slightly different locations. The end result—that of correlating the concentrations of substances with various conditions of weather and wind—you can readily see took the toughest kind of close thinking between the two groups.

During all of these months the plants, which had shut down at the time of the smog, were working on a curtailed basis, pending some final determination of a solution. Still unknown was the precise place which the plants' effluents had in the general scheme of air pollution in the valley. So it was after long thought and with much trepidation that our engineers, in conference with plant and union officials, decided in early April that the only way to get an accurate knowledge of what substances would be coming out of the plants was to run a short period of full production.

The announcement of this project, carefully worded, and complete with all the precautions that would be taken to see that there could be no recurrence of a smog, nevertheless aroused considerable fear on the part of some townspeople. But the four day test period was held, and although a 24 hour watch was kept for signs of danger and the plant was ready to cut production at a moment's notice, it was with relief that we were able to announce the end of the test without any reports of sickness.

So you see why at the conclusion of the investigation we said to ourselves that we had conducted three different studies—a study in psychology, a study in how to make a survey, and another study to get the technical facts we needed.

Many of the major findings we reached after studying both medical and engineering data have been published in the newspapers and probably have come to your attention. For instance, we found that preëxisting diseases of the cardiorespiratory system appeared as a single common factor among the fatally ill, and this finding was confirmed in the three autopsies performed. The possibility of epidemic influenza was ruled out early in the study, and there was no evidence of excessive inhalation or ingestion of fluoride in the community.

One of the surprising findings of our investigation was the large number of people—close to 6,000—who had been affected to some degree by the smog. The widespread prevalence of illness had not even been suspected by the townspeople themselves at the outset of the study. Although word of the deaths spread rapidly through the town, most people did not realize the extent of illness outside of their immediate neighborhood, and the usual remark was that "hundreds" were sick. Our house-to-house survey revealed that 15.5 per cent of the total populace in the area were mildly affected; 16.8 per cent, moderately affected; and 10.4 per cent, severely affected. It was also observed that both incidence and severity revealed a direct relationship with increasing age. Over 60 per cent of persons 65 years of age and over reported some affection from the smog, and almost one-half of those were in the severely affected group.

Of the many substances found in the atmosphere through engineering investigations, there were eliminated for consideration as causative agents those that were neither known nor suspected to be

respiratory tract irritants. There were left for further evaluation as possible respiratory tract irritants fluoride, chloride, oxides of nitrogen, hydrogen sulfide, cadmium oxide, and sulfur dioxide, together with its oxidation products.

The sulfur dioxide and total sulfur discharged into the atmosphere from various sources in the community were significant constituents of the overall atmospheric pollution load. However, the levels of sulfur dioxide found in the general atmosphere during the investigation are not in themselves considered capable of producing the symptoms observed. It is, of course, not known what levels were reached during the smog period, and, hence, whether or not levels capable of producing symptoms were reached at that time. Further, it is known that sulfur dioxide can be oxidized to sulfur trioxide in the atmosphere. It is not possible, however, to estimate the extent of oxidation and the role that sulfur trioxide may have played. That it could have had a significant effect is a possibility. It appears doubtful, however, whether either sulfur dioxide or sulfur trioxide, acting individually or together, reached levels that were capable of producing the symptoms. That is why we doubted, from the evidence obtained in the investigation, that any *one* of these substances (irritant or non-irritant) by itself was capable of producing the symptoms observed. However, a combination of two or more of these substances may well have contributed to those symptoms.

We also considered the well known fact that one substance may influence the physiologic action of another, and it is possible that there was a summation of the action of the individual irritant constituents which produced an effect greater than would be anticipated for any one of the individual constituents. Moreover, there is evidence which indicates that the effect of irritant gases can be enhanced by adsorption on particulate matter. In addition to enhanced action, gases may be carried deeper into the respiratory tract than they would normally be carried in the absence of such particulate matter. This action would carry the noxious substance into the lower levels of the respiratory system where the more damaging effects would be produced.

It is known that irritant gases exert their effect in the respiratory tract, depending largely on their solubilities; that is, compounds which are highly soluble exert their effect in the upper respiratory tract while compounds which are less soluble exert their primary action in the deeper parts of the lung. A gas, therefore, such as sulfur dioxide which would normally exert its primary action in the upper part of the respiratory tract might produce more serious effects if it were transported to the deeper parts of the lungs, as, for example, by particulate matter. Both solid particulate matter and liquid particulate matter (fog) were present in the atmosphere in large quantities during the October, 1948, episode.

Another influencing factor to be considered is carbon dioxide, which was probably a significant contributor to the overall atmospheric pollution load. Because carbon dioxide is a respiratory stimulant, it may have contributed to the effects produced by other contaminants by virtue of the increase in depth of respiration which it induces.

The engineering phase of the study has resulted, as I mentioned earlier, in a number of specific recommendations and suggestions which should help prevent any recurrence of the tragedy in Donora. Those recommendations should also prove valuable to other industrial cities and towns with geography similar to that in Donora. Simply put, I think we may say that the odds are extremely long that the combination of weather

and contamination extending over a longer period of time will recur, but we certainly cannot rule it out as a possibility. The fact that it has happened once is proof that it can happen again, and our job is to see that a recurrence is made impossible.

As one step in preventing a recurrence, it was recommended that the plants and other sources of pollution sharply reduce the gaseous contaminants —especially sulfur dioxide, which was found in considerable quantities—and particulate matter, which they emit into the atmosphere. It was also recommended that a program of weather forecasts be established to alert the community to impending adverse conditions so that adequate measures may be taken to protect the populace.

There is another reason why other cities should concern themselves with this new problem. In studying the weather history and mortality records of Donora, we found considerable evidence that Donora has gone through smog crises in the past without realizing what they were. In April, 1945, for instance, the death records show that the total for that month was double the ordinary death rate. At the same time the weather history indicates that conditions were probably conducive to an extended smog during the month. We found indications of similar occurrences of smog in 1923 and 1938.

In addition to this knowledge on the acute period of extended smog conditions, there was another major result of the Donora study, even more important in its long-range aspects. That was to raise the question of effects on health of living in a heavily contaminated area over a long period of time.

Even though an acute period of smog and air contamination has never occurred—or been identified—in some communities, how have the residents been affected during the years they have lived in this atmosphere?

For years, during our long fight in this country to do away with the smoke nuisance, we have been without scientific data to assert that there was any threat to health in smoke, as you well know. But this is different. Here in these smog areas is not only smoke, but also contamination from gases and particulate matter, and we believe that the Donora survey has shown beyond doubt that this combination can have an effect on health. The job now is to find out what those effects are and to what extent they exist.

For instance, we must do research to find out what effect air pollution has on elderly people, who by the aging process, naturally develop degenerative diseases of the lungs and heart. There is considerable evidence that the heart disease rate in Donora may be higher than that of the country as a whole. And what effect does air pollution have on children, who have an increased respiratory rate as well as increased metabolism? What effect does this air contamination have in lowering the resistance of individuals so as to predispose them to infectious diseases, particularly of the respiratory tract?

On the engineering side we need to know—before we can begin to recommend more precise controls—whether contaminants in the general atmosphere work on human beings singly or simultaneously as individual substances, or whether they join to form a new substance more poisonous than the single substances themselves.

The starting point of the whole problem, therefore, is more research. The overwhelming public interest in the Donora study and other phases of the problem has put the Congressional wheels in motion, and bills and resolutions have been introduced urging action. Assuming the leadership at the federal level, the Public Health Service is planning to undertake a vigorous program of investigation. The time has

come for the industrial hygienist in the state also to give serious consideration to this problem. Atmospheric pollution is no longer an optional field of activity—a fringe area of decided nuisance but of questionable health implications. The Donora study has erased any doubts that contaminants in the air can exact tolls on the health and lives of people. Industrial hygienists, by their training, interests, and basic functions in the public health field, have no choice but to enter the field of atmospheric pollution, as they have attacked other toxic hazards.

The division has already received requests from a number of other cities and states for aid in studying air pollution problems. Charleston, W. Va., and Whiting, Ind., for instance, are concerned about the air contamination in their areas, and both New Jersey and New York have asked that a study be made of air pollution around Staten Island. We are fast moving ahead into what may develop to be a major field of operation in improving the nation's health.

We hope that through our Donora report and future investigations we may have contributed fundamental information on which to build. It will be up to you to help furnish missing facts. The problem is too titanic for any one agency to cope with alone. The operation will be a long-range one, and will require the efforts of physicians, engineers, chemists, and others. We, in the Public Health Service, shall look to you to join us.

Health Protection Clinics

Massachusetts is pioneering in a health protection clinic through the cooperation of the State Medical Society, the State Department of Public Health, the U. S. Public Health Service, and voluntary agencies such as the American Cancer Society, the Massachusetts Heart Association, and the New England Center Hospital in Boston at which the first of 5 projected health protection clinics was opened on January 3. Here, apparently healthy persons may obtain without charge the newest approved tests known to modern science for detecting disease or disability in the early stages. Each person is screened for anemia, arthritis, diabetes, kidney disease, hypertension, heart disease, cancer, tuberculosis, and other lung pathology, obesity, hyperthyroidism, hypothyroidism, and hearing and vision defects. Anyone of 18 years or over may receive the tests if not under the regular care of a physician.

Claire F. Ryder, M. D., epidemiologist of the State Health Department is administrator, assisted by a staff of 6 physicians, 6 technicians, 2 nurses, and a medical-social worker. Each clinic session is organized to examine 25 persons. Any suspicion of disease is reported to the family physician.

Advancements in Dental Research and Dental Health Education Affecting the School Child*

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IN recent months the sale of ammoniated dentifrices has furnished irrefutable evidence that the public is aware of the importance of preventing dental disease. Health educators, school personnel, and members of health professions find it necessary therefore, to be informed concerning recent advancements in dental research and dental health education affecting the school child.

Since the prevention and control of dental diseases involves both individual and community action, these two categories will be emphasized in the ensuing discussion.

INDIVIDUAL ACTION

Inherited growth patterns give to each person a characteristic dental arch alignment and tooth arrangement. There is evidence indicating that susceptibility to dental caries may likewise be inherited.[1] Consequently, the responsibility of each individual is to obtain what is—for him or her—maximum dental health.

Among the dental health practices available to individuals are food selection, dental treatment, and personal mouth hygiene. Increasing evidence has been forthcoming within the past decade, proving that sweets are a major factor in the etiology of dental caries.[2] Therefore, the terms adequate diet, or optimal diet, should refer to the ingestion of those foods that are conducive to health, and the exclusion of such delectables as candies, cakes, and drinks sweetened with sugar. Any so-called food that contributes to the onset of dental caries cannot, in the light of recent advances in dental research, be considered healthful.

Dental attention when given promptly and skillfully will prevent and control dental diseases and maintain oral health. The part that promptness and skill play in dental treatment has been emphasized in recent studies.[3] Every child should obtain dental supervision before the third birthday. Thereafter, dental care should be instituted frequently enough to treat all dental defects during incipient stages. Dental examinations, three or four times yearly, can be recommended for most children. When irregular alignment of teeth interferes with function or perceptibly mars appearance, orthodontic treatment is required.

Techniques recommended by dental authorities and by the U. S. Bureau of Standards for filling teeth should serve as a warning to those who seek streamlined procedures for treating tooth decay. The expert dentist treats a tooth not as a separate entity but as an integral part

* Presented at a Joint Session of the Dental Health, Maternal and Child Health, and School Health Sections of the American Public Health Association at the Seventy-seventh Annual Meeting in New York, N. Y., October 25, 1949.

of the mouth. Moreover, dental treatment properly carried out contributes to the health and personality development of the child. Since broad scientific knowledge and highly developed technical skills are required to fill children's teeth, it seems inadvisable to utilize partially trained auxiliary personnel for filling the teeth of children. However, there is need for the services of auxiliary personnel in dental practice. Dental hygienists provide prophylaxis in nearly all of the states. Also, it may be predicted that in the near future all states will permit hygienists to apply sodium fluoride solution to teeth. Dental technicians and assistants render valuable services in many dentists' offices and in clinics.

Authorities have approved the application of a 2 per cent aqueous solution of sodium fluoride to the teeth of children as a partial preventive of dental caries.[10] To be effective, the solution of sodium fluoride must be applied to dried teeth and must cover all the exposed surfaces of the teeth for at least three minutes. Maximum results seem to be obtained by giving four treatments within a period of two or three weeks during the third, seventh, tenth, and thirteenth years. It should be emphasized that investigations have shown that this method reduces the incidence of *new* tooth decay by 40 per cent — not 100 per cent. Thus, regular dental treatment must be obtained, mouth hygiene is to be practised, and the ingestion of sweets is to be restricted. Fluoride treatments alone, will not maintain dental health for individuals.

A number of investigations have been conducted to find a dentifrice that will inhibit dental caries. Dental caries has been defined as a disease of the calcified tissues of the teeth, caused by acids resulting from the action of microorganisms on carbohydrates. We have mentioned two methods of preventing dental caries, namely the reduction in eating carbohydrates and the topical applications of fluoride. Investigators are confident that dental caries can also be prevented by dentifrices which would either destroy decay producing microorganisms or inhibit the action of microorganisms on carbohydrates.[4] Advertising copy writers have elaborated upon the qualities of ammoniated dentrifrices and made claims on the basis of preliminary reports of investigators.[5] Many dentists are advising the public to use the ammoniated dentifrices, but with this advice goes the warning to continue other dental measures — i.e., restricting sweets, brushing teeth immediately after eating, and obtaining regular dental care.

COMMUNITY MEASURES

Community dental programs for children have been improved by providing incremental care — giving younger children initial dental care and continuing treatment throughout the school years. Also, higher standards have been designated for children's dental care programs which should include all operations that contribute to oral and systemic health.[6] Examinations, including x-ray diagnosis and lactobacilli counts of saliva, extraction of unsavable teeth, pulp treatments, orthodontic care, prophylaxis and restoration of missing teeth are recommended for children's dental care programs.

Substandard dental treatments are at best, only temporary or relief measures, that do not improve dental conditions appreciably. What is worse, inadequate dentistry endangers the health of children and creates additional dental problems. Neglect and improper treatment of primary teeth result in infection, and inserting poor fillings may cause loss of teeth.

Unfortunately dental care programs which attempt to provide adequate treatment for an appreciable number of children are too costly for most com-

munities.* It has been suggested that prepayment and post-payment plans be tried by official and unofficial agencies to make dental care more readily available to families of marginal financial status. Some agencies, for example, the Joseph Samuels Dental Clinic of the Rhode Island Hospital, are experimenting with low fee dental care programs for children of low income families.

It would seem that dental care programs, paid for solely from public funds must be supported by programs to which patients make contributions.[7] For this reason public health and dental authorities are clamoring for more intensive research to obtain effective preventive dental measures and thus reduce the backlog of dental needs.[8] Some progress can be reported.

The fluoridization of public water supplies is being widely discussed as a means of lowering the incidence and prevalence of dental caries among school children. Presumptive evidence based on studies of children residing in areas where the water contains one p.p.m. of fluorine, is encouraging. A number of investigations of artificially fluorodized water supplies are being conducted, with several already reporting favorable results.[9] However, at least five years of additional observations will be necessary before conclusive proof will be available.

In so far as topical application of 2 per cent sodium fluoride is concerned, reports are sufficiently convincing to warrant the establishment of community-wide programs to give all children the benefit of this effective partial preventive against dental caries.[10] But parents should be informed that topical applications of sodium fluoride alone will not maintain dental health. As stated above, other dental measures must also be utilized.

In the field of health education, more effective means are being utilized to reach individuals and influence them to accept the responsibility for their dental health.[11] Dental care programs require motivating techniques that tax the ingenuity of health educators. Leaflets, motion pictures, and posters, so widely used, are considered mere tools which require reënforcement by creative learning. Informative discussions must be augmented by motivating procedures to improve dental health practices.

Coördination of health, welfare, and education groups has been found effective in promoting community dental treatment and dental health education programs. More people should be induced to become interested in and to coöperate with dental programs.[12] Participation in coördinated dental health projects will enable individuals to obtain authentic information concerning oral health practices and sound community programs.

The Council on Dental Health of the American Dental Association, the U. S. Public Health Service, the Children's Bureau, and state departments of health, have coöperated to establish standards for local dental programs.

Furthermore, more reliable methods for evaluating dental programs have been suggested. As newer methods for improving dental conditions are announced, it becomes obligatory for administrators to have accurate data regarding dental conditions among school children. The caries experience rate,[13] called the DMF rate, enables one to study group susceptibility to dental caries, and will provide information for age, sex, and race groups; when broken down into component parts, the DMF rate will also indicate how effectively dental needs are being met. Knutson has suggested a short cut method for estimating caries susceptibility.[14] He uses the percentage of children with one or more DMF teeth and the number of M teeth (number of

* The term adequate treatment refers to standards suggested by Gerry, by the Children's Bureau, and the Council on Dental Health of the American Dental Association.

permanent teeth previously extracted and the number of permanent teeth requiring extraction).

SUMMARY

Since the American public is interested in preventing dental disease, public health personnel should be aware of advancements in dental research.

Present knowledge indicates that topical application of fluoride and restriction of sweets will prevent dental caries. The fluoridization of public water supplies shows promise of good results but conclusive proof awaits further studies.

Early and regular dental care, when provided with due regard to standards set by dental authorities, can be depended upon to prevent dental disease and maintain oral health. Not only will substandard techniques prove ineffective, for improving dental conditions, but will in many instances, endanger the dental health of individuals and create problems more difficult to solve.

Ammoniated dentifrices may be recommended with the precaution that restricting sweets, tooth brushing after meals, routine dental care, and topical applications of sodium fluoride are not to be neglected.

Community dental health committees and health education techniques to reach individuals are recommended to improve dental conditions. The DMF rate and the Knutson Index are suggested as measures for evaluating dental programs.

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Special Leaflets for Use in Controlling Toxemia and Excessive Weight Gain in Pregnancy*

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TOXEMIA of pregnancy is a condition characterized by any one or a combination of the following signs: blood pressure elevation, accumulation of excessive fluid in the body (edema), and a positive test for albumin in the urine. Unattended, a certain number of women with this condition will develop eclampsia or, convulsions of pregnancy. Given the finest care available today, about one out of every ten women who develop eclampsia dies. It goes without saying that the toll is higher outside of the best medical centers. Other prices to be paid for toxemia are, often, permanent damage to the mother's health, miscarriages, prematurity, stillbirths and neonatal deaths. The cause of this great threat to the pregnant woman is unknown. However, clinical research, in attempting to discover the cause of toxemia, has uncovered certain facts that may be made use of in its management. Some of this progress lies in the field of the nutritionist and other public health workers.

Toxemia, together with hemorrhage and infection, are the three great killers of pregnant women. In the South, toxemia is *the* great killer. On the contrary, elsewhere in the nation, maternal death reports usually list either hemorrhage or infection as the major cause. As an example of our problem, in Mississippi in 1947 there were 176 maternal deaths. Seventy-six were due to toxemia while only 36 and 14 were caused by hemorrhage and infection respectively. The reasons for this ill-fortune of the South are multiple, but one seems to be the poor quality of the diets of the pregnant women. The efficacy of an improved diet in reducing the chances of acquiring toxemia or, the severity of toxemia, has been suggested by a number of studies.

We wish to discuss and illustrate three specialized nutrition leaflets, explaining some of the steps in the development of the leaflets into their final form, as they are used today in the county health units of the Mississippi State Board of Health. Repeatedly, peculiarities of the locale and of the patients had to be met by considered changes in the wording and general presentation as we improved these leaflets.

We are concerned here, not primarily with the normal, healthy pregnant woman but with the woman who gives her doctor reason to believe that she is likely to acquire toxemia or has actually developed it.

To sketch rapidly the background of the patients we were dealing with as we developed these leaflets, we will state that the majority were drawn from the lowest educational, economic, and social level in the state of Mississippi. A pre-

* Presented before the Nutrition Section, Southern Branch, A.P.H.A., Dallas, Tex., April 15, 1949.

ponderant majority were Negroes. Vocabularies and ability to grasp new ideas were limited. At times the central problem seemed to be to get these diet instructions into simple enough terms for them to be understood. Because of the specialization of the material presented, we found these guides to diet lent themselves more to person to patient elucidation, rather than to person to class.

First, we tried suggested menus but they absolutely did not work. The patients either did not understand this approach or they just could not handle it in the home.

We learned in our early attempts that there were words that were over the patients' heads. We probably should have guessed that they would not understand "omit." As we progressed, we transformed long sentences into short, choppy sentences. We found that the entire presentation had to be kept brief because the span of attention in the people with whom we were dealing was short. Positive terms proved more effective than negative ones, and as we improved our leaflets we used less and less of the negative variety.

We tried to find mimeograph paper that would be in eye-catching and attractive colors. We settled on paper in vivid hues of a yellow, a pink, and a blue. Dimensions of the leaflet were the ordinary 8½" x 11" letter-size mimeograph paper. The observations received from public heath nurses that these leaflets were found hanging from nails on walls of rooms and cabins, we feel, bespeaks our success here. This mimeographed material had to be inexpensive and easy to handle. Simple line drawings were added to help catch attention, using the superior power of the picture over the printed word. The too rotund woman on the scales, and in another place, the hands raised in horror, leave no doubt as to the purpose of the leaflet (Figure 1).

Preliminarily, we had to find out what these women were already eating, so that we would know what they could afford and what was available on the farms and gardens. To go too far afield from their already established habits, promised very little coöperation. Subsequently, we have urged them with some success to grow more of the desirable foods. Neighborhood grocers have responded to requests of the nurses and nutritionists to stock new items, particularly dried skim milk. This dried skim milk, was previously unknown, and was one of the foods in regard to which the women needed demonstrations as to use and methods of preparation. The simple directions on the carton could not always be comprehended. Home economics classes from the local colleges and high schools were valuable team mates in putting on these demonstrations.

The first leaflet to be considered concerns itself with the pregnant woman who is gaining too much weight (Figure 1). Statistics have repeatedly borne out

FIGURE 1

When Your Doctor Says, "Gain Less Weight" Your Doctor Wants You to Leave out Certain Foods:

1. Eat no fried foods, fat meats, gravy.
2. Eat less rice, macaroni, spaghetti.
3. Eat no ice cream, cake, pie, cookies, candy.
4. Use no pop or other bottled drinks.
5. Eat less rolls, biscuits, cornbread, crackers.
6. Use less fat in your food.
7. Use less salt on your food.

Leaving These Foods Out of Your Meals Will Help You to:

1. Gain less weight.
2. Have a more normal pregnancy.
3. Feel well.

Do Eat Every Day:

1. Three small meals—nothing between meals
2. Vegetables twice a day, one green leafy or yellow cooked with little fat; One raw vegetable
3. Fruits—2 servings—as oranges, grapefruit, tomatoes or melons
4. Milk—1 quart—it may be skim or buttermilk
5. One egg—poached or boiled
6. Lean meat, fish or poultry—one large serving
7. Bread—no more than one piece with each meal
8. Butter or margarine—small amount
9. Cod liver oil or other source of vitamin D

See Your Doctor or Visit Your Health Department Regularly During Pregnancy and Six Weeks After Your Baby Comes.

Mississippi State Board of Health
Jackson, Miss.

that with excessive weight gains in pregnancy there is an increased incidence of toxemia. Stories were commonplace of women who gained 40 and 50 lbs. or more in pregnancies, previous to their discovering the benefits of good prenatal care. Ideally, a woman should not gain more than 16 to 20 lbs. over her prepregnant weight. Not only is excessive weight gain in the 9 month period dangerous, but too rapid a gain in any week or month is equally ominous. Sound dietary advice, if heeded, will keep most weights within the safe limit. Usually, pregnant women who gain too much do so because they eat too much, to risk a truism. They eat too much because they have increased appetite or an increased psychological need for food. The false adage advising a pregnant woman to eat for two is still being passed on by well intentioned mothers and neighbors.

The subject of weight gain in pregnancy is so important that it should be mentioned at every prenatal visit. A leaflet such as this makes a convenient check list to go over with the patient, insuring that nothing will be forgotten. Extemporaneously inserted asterisks, underlinings, and marginal notes individualize this piece of paper to the particular patient's needs and sins.

We have been struck by the number of patients who divine that we are keeping their weight down to make them have small babies, and hence an easier time in giving birth. As there is a tendency to be proud of large babies this may produce some resistance. It can be explained that there is no direct relationship between the weight gained by the mother and the weight of the baby and that we are *not* trying to produce a small baby.

In comment on Figure 1, it should be noted that fried foods and gravy are high on the list in the South. Frying of foods should be vigorously denounced. Gravy with its high salt content is a double threat, more of which we shall speak later. Overindulgence in ice cream, cake, pie, cookies, and candy is, in our experience, a common cause of weight gaining in pregnancy especially among the colored.

Pop is consumed in large quantities, at least by those who do not live too far away from a source and certainly consumed on days when they come to town to attend the maternity clinic.

We say "Eat *less* rolls, biscuit, cornbread, crackers." At first this read, "Eat *no*" but we found that it was impossible for them to live up to it and we had to adopt a more realistic approach. They simply did not have the selection of foods to give up these things. "Use less salt in your food" is stressed in another leaflet.

In the second part of the leaflet, we attempt to justify the diet. It is important to explain to the patient *why* she should control her weight. A convenient way, we have found, is to tell the patient that it will help her to avoid "complications." Most simple patients understand this sinister word. "High blood" has been a persuading phrase. Your explanation can be graded to match the patient's intelligence. We have considered adding, "4. Have a healthy baby."

In the third group of recommendations, we are taking the opportunity to get in suggestions for a well balanced diet. "Three small meals—nothing between meals" may be open to some criticism. An orange or apple between meals to hold one over until meal time certainly would do no harm. However, with experience we concluded that it was necessary to mention the three meals with nothing between because so many of these people just ate all day long, never sitting down as a family for a meal, or at the most, one or two times a day.

A word about vegetables. In addition to the naming of foods we found that it was necessary to make sure that they knew how to prepare them properly if

the maximum benefits were to be derived from our efforts. We found it profitable to put on demonstrations of cooking green vegetables. Over-cooking of this staple was most prominent among the faulty cooking methods. When asked how they cooked turnip greens, mustard greens, and collards a frequent answer was, "I cooks it until it falls to pieces."

After a quick checking of the diet of a patient who has gained too much weight and threatens to develop toxemia, or who has actually developed toxemia, it is apparent that the diet is fairly acceptable but contains too much salt. Salt, or the sodium ion in salt, holds water in the body, especially in the tissues of the pregnant woman. This causes the edema that we want to avoid. To handle this type of case we developed this leaflet, "When Your Doctor Says, 'No Salt'" (Figure 3). At first we had tried without success working with a list of foods high in sodium content.

These patients are becoming familiar with the fact that high blood pressure and swelling of the extremities are unhappy signs.

If a woman religiously omits salt in cooking and at the table, but partakes of food with a high salt content her sacrifices have been in vain. Hence, the importance of knowing the high salt-containing foods that are popular in your region, and counselling against them. We were surprised when we learned from our patients that luncheon meats were high on so many shopping lists. We were obliged to interdict luncheon meats because of the high salt content.

This may be a good place to tell the mothers that they must make a little sacrifice for the sake of their health and their baby. Encouragement will be gained from learning that this doing without salt is only a temporary measure.

"When Your Doctor Says, 'Eat More Protein and Use Less Salt'"—emphasizes the type of diet that the physician may want to prescribe for the ambulatory patient with a mild toxemia, or possibly the toxemia patient who is to be treated at home (Figure 2). We pondered over the word "protein." Very few of the patients were going to know what *that* meant. We decided it

FIGURE 2

When Your Doctor Says: "Eat More Protein and Use Less Salt"

During pregnancy your doctor wants you to eat certain foods and to leave out salt.

Eating less salt will:

1. Help to keep your face, hands, and legs from swelling.
2. Help you to gain less weight.
3. Help you to feel well.
4. Help you to have a more normal pregnancy.

"Eat More Protein and Use Less Salt," means to eat Every Day:

1. Lean meat—pork, beef, veal, chicken, fish or liver. One to two servings; or dried peas or beans—3 servings; or 1 cup roasted, shelled peanuts. No salt added.
2. Milk—1 quart every day. It may be buttermilk, skimmed or clabbered milk or dried skim milk mixture.
3. Eggs—preferably 2, poached or boiled.
4. Turnip greens, collard greens, mustard greens or other greens. *Do not cook with salt or salt meat.* 2 servings.
5. Tomatoes, oranges, grapefruit, satsumas, watermelon or cantaloupe, or eat a raw vegetable every day as raw cabbage, green peppers or raw turnips.
6. Sweet or Irish potatoes, and other vegetables and fruits—2 or more servings.
7. Whole grain cereals—cooked without salt—one serving.
8. Bread—made without salt—no more than 3 servings.
9. Butter or margarine—salt free—some daily.
10. Cod liver oil or other source of vitamin D.

Leave off These Foods:

1. Salt cured meats, as salt pork, bacon, or ham
2. Sausage
3. Canned meats of all kinds, including canned fish
4. Luncheon meats, wieners and bologna
5. Fried foods of all kinds (boil or bake instead)
6. Greasy foods and gravy
7. Peanut butter
8. Crackers
9. Store cheese
10. Pickles
11. Canned soups and vegetables
12. Prepared salad dressings
13. Pies, cakes, doughnuts, sweet rolls and candy
14. Soda pop and beer

Season cooked vegetables with a very little unsalted fat. Add no salt. *Add no salt* to food at the table. *Use no baking soda.*

See Your Doctor or Visit Your Health Department Regularly During Pregnancy.

Mississippi State Board of Health
Jackson, Miss.

was time that they learned it. As a co-worker expressed it, "In recent years they have learned the word 'vitamin' and it hasn't killed them."

The leaflet (Figure 2) outlines the beginning of a good diet with increased amounts of protein. The peas, beans, and peanuts may raise an eyebrow because of their sodium content but for many it was the only dependable source of protein so we decided to include it. A good deal of resistance on the part of the physician to the high protein-low salt diet will be encountered, particularly when you attempt to encourage the eating of meat. The use of the low salt diet in hypertension has received a good deal of publicity in the last two years. This has prepared the physician to accept the low salt diet. With protein the story is different, because only in the past decade or two medical science has done an about face on meat eating. Red meat, once regarded as anathema to the pregnant woman, came into a new respectability and formed a bulwark in her diet. It certainly seems to do no harm. On the far fringes of the latest medical information, such as we find in some rural southern areas, they have not yet been reached with the message of meat for the pregnant. The attempts to convert practitioners to the acceptance of meat for pregnant women has been compared to the situation early in the century when the regime of increased feedings to typhoid patients provoked skepticism. You must be prepared to meet opposition by explanation of your stand. Backing you, you have the current practice of all the best obstetrical clinics in the country. The value of protein in avoiding anemia, which aids and abets all the three great killers of pregnant women, is not to be forgotten.

A supplementary leaflet entitled, "Meat Substitutes and Meat Extenders" was of value where the prospective mother had financial obstacles to increasing her protein intake. Expecting a diet low in protein to be lacking in other essentials, we found on the contrary that, due undoubtedly to the high prices of animal proteins, there appeared to be a selective withdrawal of proteins from the tables of our patients, with other components of a good diet relatively maintained.

We found it important to name all the various types of milk that were acceptable. We not infrequently encountered a woman who had been told by some well meaning adviser that buttermilk was bad for her.

In Figure 3 we found it important to list the food articles rather than generalizing. Sometimes it was necessary to overcome a local prejudice. In one county we found that a midwife had widely disseminated the word that mustard greens were not good for pregnant women. Tracked down, the midwife gave the unscientific explanation that she "knew someone whom mustard greens made sick."

FIGURE 3

When Your Doctor Says, "No Salt"—

Your doctor may want you to leave salt out of your food during pregnancy.

Using less salt will:

Help to keep your face, hands, and legs from swelling.

Help you to gain less weight.

Help to keep your blood pressure down.

Help you to feel well.

"No salt" in your food means:

1. Add no salt when cooking your food.
2. Add no salt to your food at the table.
3. Eat no salt pork, ham, or bacon.
4. Take no baking soda for an upset stomach.
5. Eat no soda crackers, pickles, canned fish, canned meats, luncheon meats, or store cheese.

"Do Eat Every Day"

1. Milk—one quart
2. Green and yellow vegetables—at least one
3. Oranges, tomatoes, grapefruit, raw cabbage, or melons—two servings
4. Other vegetables (including potatoes) and other fruits, two or more servings
5. Lean meat, fish, poultry, dried beans, or peas—at least one large serving
6. Eggs—one or more
7. Whole grain, or enriched bread or cereal—one serving
8. Cod liver oil or other sources of vitamin D

See Your Doctor or Visit Your Health Department Regularly During Pregnancy.

Mississippi State Board of Health
Jackson, Miss.

In our early days we used collective terms like "citrus fruits." They did not know what this meant and as our experienced matured we listed the available fruits.

At the bottom of Figure 2 is the list of high salt and high carbohydrate foods to discourage. It begins with the never-ending and only occasionally successful war against salt meats. Commercially canned vegetables do not have the great amount of salt that soups have, yet we wanted to encourage fresh vegetables. We found the patients were using salt meat in the home canning of vegetables.

Lard and vegetable fats are urged instead of salt meats for seasoning. We are repeating the warning against soda that we had in our "less salt diet." We think this is worthy of emphasis because so many of these patients were found to be using baking soda in absurd amounts. Too much is used in cooking and too often it is taken as a medication for heartburn, indigestion, and several more vague complaints. Baking soda, like table salt, has the sodium ion. Therefore, we discourage the use of baking soda as we do the excessive use of salt. Most important, again we are stressing the giving up of salt both in cooking and at the table.

In a 23 month period ending in May, 1949, we mimeographed and sent out to physicians and county health departments 25,000 of these leaflets. The paper cost $50, the ink $12.50, and the stencils $3.20, making a total of $65.70 for the entire enterprise. Without a pointed effort to get these to private physicians, about 25 have heard of them or seen them and requested the leaflets. A feature you may want to consider is offering the leaflets to a physician with his name at the head of the sheet, hoping this personalization will induce him to accept and use them.

Measurement of the results of our leaflet campaign is difficult. We know that large groups of pregnant women have been reached with specialized instruction that they either never received before or which had been difficult to put across. This instruction may seem to be so specialized at first glance as to have a narrow application, but in the South, due to peculiar local conditions and high toxemia incidence, it is needed by an unusually large percentage of the pregnant women. With some thanks to these leaflets, we feel that the patients who have prenatal care at the health department clinics receive sounder dietary advice than that received by any other large classification of patients in the state. Some evidences of our success are that physicians are asking for the leaflets in increasing numbers and that the public health nurses who use them are enthusiastic. The nurses report that they are handy as a supplement to their dietary advice, they are *understood* by the patients and they are *used* by the patients. Whenever we query nurses and health officers as to their opinion of the leaflets they cite case histories of patients who have checked excessive weight gain and improved or vanquished signs of toxemia by having followed these instructions. We can emphatically state that when we call on physicians and show them these leaflets, they want them.

These leaflets were created to provide a special management needed by patients with toxemia of pregnancy and by many women living in a region where toxemia has a high rate of occurrence. It is common for over one-third of the women attending a maternity clinic in Mississippi to exhibit evidences of toxemia, and not rare for over one-half of them to be thus classified. These leaflets are not intended as a definitive treatment for toxemia but an integrant of the patient's total management. Patients with toxemia should be under the surveillance of a physician and when we discover a case in our county health units, she is referred to her doctor. How-

ever, in many districts the health department continues the supplementary care of the patient, weighing, guidance in maternal hygiene, care of the infant, recording of blood pressure, and diet instruction. As a prophylactic measure, the role of weight control in the South is obviously important. These leaflets, as we present them today are not perfect. The changes that brought them to this stage will continue. Because of the great need in the South for this type of attack we hope that the nutritionists and other interested workers here today will apply their experience to improve this effort against toxemia of pregnancy.

Yellow Fever in Panama

By courtesy of Dr. Miguel E. Bustamante, Secretary General of the Pan American Sanitary Bureau, the circumstances growing out of the outbreak of yellow fever in the Republic of Panama are summarized herewith from the October, 1949, issue of the *Monthly Epidemiological Report* of the Pan American Sanitary Bureau.

In the last six weeks of 1948, 5 fatal cases of yellow fever were reported in a jungle area in the Province of Panama. These 5 were fully confirmed and 3 additional non-fatal cases were also reported without confirmation.

The 5 confirmed deaths were of persons who had lived in or penetrated jungle areas near the town of Pacora. Only one breeding place of *aegypti* was found in the region, perhaps due to the fact that the area had been recently treated with DDT as part of an anti-malaria campaign.

These were the first cases of yellow fever reported in the Republic of Panama since the year 1905 and they were the first clinical cases of jungle yellow fever, although protection tests with human sera performed in 1941 and 1942 east of the Canal revealed various positive cases of children 9 years of age or less.

Between early August and September 10, 1949, 3 additional fatal cases of yellow fever were reported from the Province of Colon. No *aegypti* were found in these areas but species of *Haemagogus* were found to be present.

Of a total of 801 human blood sera examined, 16.9 per cent were found positive among 73 different places situated in all the Provinces. Monkey blood sera were also examined with 15.5 per cent positive. More than half a million inoculations against yellow fever were performed and 60 per cent of the housing treated with DDT.

Vol. 40

American Journal of Public Health

and THE NATION'S HEALTH

Official Monthly Publication of the American Public Health Association, Inc.

Volume 40 February, 1950 Number 2

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THE SEVENTH EDITION OF " THE CONTROL OF COMMUNICABLE DISEASES "

THE appearance of the Seventh Edition of the Association's report on the Control of Communicable Diseases is another landmark in the history of a distinguished enterprise. This series of reports, prepared under the wise and tireless leadership of Dr. Haven Emerson, have rendered a service to public health which has been of world-wide significance.

Successive editions of this report have provided a summary of the best current knowledge on which the heath officer must base his regulations and his administrative procedures.

Not less than half a million copies of these reports have been printed and distributed among English-speaking peoples since the first edition was published in 1917. The number of the fifth edition distributed was more than three times that of the fourth; the sixth more than three times that of the fifth. This sixth edition was translated into several languages, including Spanish, Chinese, and Thai. The Pan American Sanitary Bureau translated, published, and distributed the Spanish edition. It was distributed by the U. S. Office of War Information with its own imprint, was approved for distribution to the staff of UNRRA, was recommended for official adoption by the National Health Administration of China, sent out under the special imprints of the British Ministry of Health, one medical school, one Canadian province, the U. S. Office of Indian Affairs, two agricultural workers' unions, and 11 state and one city health departments. In addition, it was made official with, and distributed in quantity by, many other state and city health departments.

In the preparation of the Seventh Report, the committee has had the collaboration of the U. S. Public Health Service, the American Academy of Pediatrics, the Armed Forces of the United States, the Ministry of Health of England and Wales, and the Department of Health for Scotland, the Pan American Sanitary Bureau, and the World Health Organization.

The new Report is characterized by a clearer and more logical presentation of control procedures under the headings of preventive measures, control of the affected individual, contacts, and environment, epidemic measures, and international measures, the last mentioned chiefly to meet WHO needs, and in consequence of the diminishing size of the world. Advances in epidemiologic knowledge have resulted in increased number and scope of the definitions presented. A total of eight new diseases are dealt with, chiefly because of advancing scientific knowledge, among them:

Rickettsialpox, with more detailed treatment of other rickettsias, Q fever, etc.
Histoplasmosis — important chiefly because of its relation to tuberculosis.
Kala Azar — related to the economy of many disadvantaged countries.
Enterobiasis, because of its prevelence in an estimated 20 per cent of population in the United States.
Echinococcosis — Hydatid disease.

The Seventh Edition will, as we anticipate, be re-published in *Public Health Reports*. Orders for copies (to bear the imprint of the organization in question) have already been received from the health departments of eighteen states, which include about one-fourth of the population of the United States; from the Territory of Alaska; from the Armed Services of the United States; and from the Ministry of Health of England and Wales. A Spanish translation and presumably a Portuguese translation will appear under the auspices of the Pan American Sanitary Bureau.

The global influence of a report prepared by a voluntary professional agency in one country is a unique phenomenon. It is a source of pride to the American Public Health Association; and a tribute to the inspired leadership of Dr. Emerson and his committee.

SOME PRACTICAL ASPECTS OF COMMUNICABLE DISEASE CONTROL

IN connection with the admirably basic Committee Report which has been discussed above, it seems pertinent to consider significant current trends in the actual measures adopted by progressive health departments for the control of the four common virus diseases of childhood, chickenpox, German measles, measles, and mumps, trends which essentially crystallize the committee's leadership.

Experience has shown that the traditional procedures of isolation and quarantine have failed to accomplish their purpose — the reduction of the incidence of the diseases in question. Where the records have been carefully analyzed, there is no valid evidence that their actual prevalence, has been substantially reduced.

What has happened, has been a striking reduction in the *fatality* of the virus diseases of childhood, a decrease which is mirrored in many communities by a death rate close to zero. In the case of measles, gamma globulin has been employed to modify the course of the disease. Even more important is the fact that, in these common virus diseases, fatal results commonly ensue from secondary bacterial complications rather than from the primary diseases themselves; and, for these bacterial complications, we have excellent control methods, through the use of sulfa drugs and antibiotics.

The Health Departments of New Haven, Conn., and surrounding towns, in coöperation with the pediatricians and family physicians of the area—like thought-

ful public health and medical workers in other parts of the country—have been studying this situation intensively during recent years. One leader in this movement has stated the case in extreme form, as follows: "It has been determined that these diseases—measles, German measles, mumps, and chickenpox—*must be allowed to occur in childhood*—rather than attempt prevention with the alternative of having them contracted in adolescence or adulthood. These diseases have no preventives, and adolescents and adults are being attacked in greater numbers, and with greater severity. There is an increasing number of cases being reported where contraction of German measles by pregnant women has resulted in malformation of the fetus or even miscarriage. Also, mumps in teen-age boys and in men frequently results in orchitis."

The writer would hesitate to follow this statement to its complete logical conclusions—that we ought to expose all children as early as possible to the childhood diseases. He recalls the day when it was argued that the control of the spread of the tubercle bacillus was dangerous, since it would lead to the development of a non-immune population through which tuberculosis would spread like wildfire. Somehow we seem to have escaped this hazard. Pure logic is a dangerous guide in the actual conduct of human affairs. Logic is unassailable when it deals with a series of known variables; but in daily living too many other unsuspected factors enter into the problem.

The actual steps taken in many areas are, however, empirically sound; and it is interesting to note that the changing policy here was not imposed from above. It represented, as Dr. Abraham Gelperin of the New Haven City Health Department has said "the crystallization of the entire local medical profession's thinking into a concerted effort by all of us in our mutual function of providing the best medical care for the population as a whole as well as what is best for each individual 'patient.'"

In the first place, the period of exclusion from school for diseases under discussion has been reduced in New Haven and contiguous communities to the following periods:

Chickenpox. Six days after onset of illness (presence of dry scabs, not barrier).
German measles. Seven days after onset, if recovery is complete.
Measles. Seven days after onset, provided no symptoms, such as rash, cough or nasal discharge persist.
Mumps. Seven days after onset provided that all swelling has disappeared.

It is of special interest to note that the enforcement of isolation in these diseases is largely justified, not for the protection of other children from virus infection but for the protection of the patients themselves from secondary bacterial infections.

In the second place—and much more important—is the removal of all regulations for exclusion from school of contacts with any of the four diseases in question. Such contacts are, however, to be observed daily in the school and sent home at the first sign of illness. The classic procedure of quarantine signs is wholly eliminated; and no longer is the health department in the business of extensive paperhanging.

Even in the case of the more serious bacterial infections, there have been similar relaxations of traditional procedure. All cases of infection with Beta hemolytic streptococci are quarantined for two weeks (instead of quarantining "scarlet fever" for three weeks or more and other manifestations of infection with the same germ not at all); while contacts are given penicillin by the family physician and sent back to school. Whooping cough is isolated for a minimum of three weeks; and

contacts are excluded from school for two weeks, unless they have had, or are having pertussis prophylaxis.

In parallel with modification of outworn isolation procedures, emphasis on immunization has been stepped up.

In the fall, " just before the usual outbreaks of communicable diseases, an important message was sent to all parents about another change in the immunization routine in the school system. All parents were urged to see that their children have a single booster inoculation against diphtheria, whooping cough, and tetanus during the first year of school life. The reasons are as follows:

" The protection against diphtheria, whooping cough and tetanus that was given a child by the inoculation received in infancy does not last either forever or even during the entire school life. All physicians strongly recommend a reawakening, a booster, an added stimulation to the protection given by the injections dating back from two to five years.

" The greatest number of cases of all the childhood communicable diseases occur during the first few years of school. Therefore, the additional and important protection given by the one booster inoculation protects a child during that period of greatest hazard. The single injection contains all three vaccines and will bolster a child's resistance to a level high enough to afford adequate protection. Protection is like fire insurance. A child's 'health insurance' needs renewing.

" The new regulations governing communicable diseases have accomplished several things. Those stricken with the disease and also the contacts do not lose so much school time, the job is made easier for the teacher. The shorter isolation periods for the sicknesses mean a great saving in nurses' and doctors' time and family difficulties. Parents no longer have their other school children underfoot while one child is ill. Furthermore the frequent fuss and furor attending the occurrence of either a case or outbreak of measles, German measles, mumps, or chickenpox in the immediate neighborhood is reduced by parent education in the facts already presented." (A. Gelperin)

The policies outlined above are by no means unique. Yet progress along such lines has been by no means universal. Dr. J. I. Linde, Health Officer of New Haven and other imaginative leaders of the profession have outlined a course which should be more widely followed.

THE GAME OF LIFE

HEALTH educators are, by this time, fairly well convinced that their approach should be positive, rather than negative. They no longer stress the horrors of disease. Of course, in the case of specialized programs dealing with specific disorders, it is difficult to avoid a negative approach and such an approach seems to be a useful road to money-raising. In the health education of the individual, however, and in the teaching of hygiene to the school child, the coughing consumptive and the poliomyelitis cripple and the patient suffering from cancer are not featured. Health is the watchword—not disease, or the absence of disease.

There is one further development in motivation which is important, a development clearly visualized by the leaders in this field but not always practised by their followers.

" Health," after all, is a vague abstraction; and abstractions rarely offer powerful stimulus to action. The child who is keenly interested in his " health " should be promptly referred to a child guidance clinic. The normal child is interested in popularity, in success in games (possibly in some cases, in school standing); or, later on, in finding a mate and getting a job. There is relatively little difficulty in getting the member of a football team to obey training rules. He knows that such

rules will bring results that will be worth while, for him. He is interested—not in "health," but in touchdowns.

We respectfully suggest to the health educator that he, or more probably she, devote half-an-hour each week to the intensive study of the pictures in the advertising columns of our more popular (but reasonably respectable) magazines. These advertisers have a fairly keen sense of reality. It is possible to gain from them many ideas as to the sort of stimuli which really move people to action. Forget "health" in the abstract; and relate your motivation to what is the basic normal urge—Playing the Game of Life—in whatever form that game presents itself to a given individual or a given group.

THE SECRET OF THE WEST NORTH CENTRAL STATES

THE remarkably low death rate of such states as the Dakotas, Nebraska, Iowa, and Kansas have long presented a challenging problem to the statisticians. The rural white age-adjusted death rate in the West North Central States in 1940 was 16 per cent below the rural rate for the country as a whole and the corresponding urban white rate was 6 per cent below the national figure.

In an attempt to throw light on the perplexing problem, T. D. Woolsey has conducted a study [1] of fundamental importance. Our statistical friends advise us that his techniques are sound and his conclusions are of interest.

This investigation involved an analysis of age-standardized death rates in 124 counties distributed over all sections of the United States, with respect to the correlation of these death rates with a variety of social and economic and health factors. Four of these factors, involving the indices of the level of rural living, the race stock of the population, the percentage of births delivered in hospitals and the percentage of workers employed in agriculture were intensively analyzed. The first and fourth of these indices proved most significant. If the "rural level of living" (measure of the standard of living in rural areas) and the proportion of agricultural workers were held constant, other geographical differences fell within the limits of random variation.[2]

Thus, the determining factor in the excellent viability record of the North Western States would seem to be the combined effect of good living standards and of rural life. To be a prosperous farmer appears to be a desirable health ideal.

1. *Pub. Health Rep.* 64:909 (July 22), 1949.
2. With the exception of six counties in Arkansas, where it seems probable that reporting of deaths is inadequate.

Clearing House on Public Health Salary Information and Personnel Needs

BROWSING AMONG PRINTED TOOLS

Those who are up to date on the personnel management magazines need read no further. For others, a brief browsing among some of them is here summarized. *Personnel* is published bimonthly by the American Management Association (330 West 42 St., New York 18). The May, 1949, issue at hand, for example, has an article on "Developing and Using Performance Standards" by two staff members of the U. S. Civil Service Commission, and another on emergence of a "New Management Era." The theme of the latter is that technology in management far outruns human relations, which is here called humanics. The rewards of proper dealing with human resources are "that the people under our leadership are better workers and better citizens for having worked with us."

The same issue deals with "Readability and Human Interest of House Organs" in which a deep bow is made to *The Art of Plain Talk* by Rudolph Flesch (Harper). This, too, is not lacking in usefulness for the personnel director, who sometimes stumbles, not from lack of good will but from lack of means of effective communication.

Public Personnel Review is the quarterly journal of the Civil Service Assembly (1313 E. 60 St., Chicago 37). Its July, 1949, issue discusses "A Public Health Trainee Program" by two staff members of the Indiana State Board of Health, as well as "Public Service Prestige: Problem and Paradox." It also has its say about writing in "Plain Talk for Government Writers," and in a review of Flesch's latest book *The Way To Write*, also published by Harper. In October, 1949, the *Review* includes "You and a Handbook for Employees" by William Brody, Personnel Director of the New York City Health Department. This has some pertinent suggestions for this, as yet, relatively new tool in employer-employee relations. His text might be "The spirit of working things out together replaces an enumeration of 'thou shalt not's.'" The Assembly also has a list of its publications dealing with public personnel administration that should be found useful.

Public Administration Review, the learned quarterly of the American Society for Public Administration (1313 E. 60 St., Chicago 37), also has food for the administrator and personnel director. The 1949 winter issue opens with "Progress in Metropolitan Integration" which deals with the problem of city-county government consolidation, a consolidation that has more often taken place in health than in other services. Nor is it to be supposed that such consolidations have no relation to the personnel problem. The 1949 spring issue of the same quarterly reviews *Government as Employer* by Sterling Spero, (Remsen Press), a discussion primarily of unionization of government workers. The reviewer says, "Anyone wanting a book which contains the whole story of government as employer cannot go wrong with this one."

WHAT IT COSTS TO LIVE

The Heller Committee for Research in Social Economics is an endowed adjunct of the University of California. For about two decades it has been making significant contributions to social

economics, particularly as to wages and living standards and their effect upon health and well-being.

It is staffed by professors of the various related departments of the university — sociology, economics, statistics, home economics, among others — has a full-time technical staff, and uses students for the clerical and elementary statistical jobs, giving them both experience and a chance to earn while they learn.

Among the activities most pertinent to Clearing House readers is this committee's annual pricing of three standard budgets at varying income levels. Two of the 1948 studies are *Quantity and Cost Budgets for Three Income Levels* (Sept., 1948, $1.25), and *Food for Four Income Levels* (Sept., 1948, $1.00).

The three income levels of the former are wage earner, white collar worker, and executive. The standard annual budgets for the three levels for a family of four require respectively $4,111, $5,208, and $12,522. A week's sample menus are included for each group and they furnish some amusement along the way. On Tuesday, for example, the executive feasts on macaroni-ground meat casserole while the wage earner has stew with dumplings, and the white collar worker, liver patties. Obviously the differences in the three income levels are not chiefly in food items, but in rent, clothing, equipment, education, recreation, medical care, personal services, etc.

And just to keep perspective the committee also has a study on quantity and cost budgets for dependent families. This figures $2,003 annually.

The 1949 studies should now be available. This material will be found useful in setting salary scales elsewhere. Even though the studies are based largely upon workers in industry it is not to be supposed that a stenographer in a health department lives much differently from one in an airplane factory. Nor does the health officer of Seattle, for example, have fewer calls on his hospitality and his charity, nor less need to maintain prestige than his opposite number in the Boeing aircraft plant.— University of California Press, Berkeley.

A DECADE OF LIVING COSTS

Public Health Nursing for July, 1949, deals with living costs as it affects nurse recruitment. The article is "Cost of Living: A Decade of Changes and Trends." The author is Franklin B. Caffee who is a member of the A.P.H.A.'s Subcommittee on Salary Study, as well as public health representative in the New York office of the U. S. Public Health Service. He really lays it on the line with respect to the lag in nurse salaries in relation to living costs. Conclusion: "The safeguarding and improvement of the economic status of nurses is one of the most practical methods of attracting an adequate supply of high calibered young people into the profession of nursing." The 22 references to pertinent material constitute a veritable gold mine of source data.— *Public Health Nursing*, 1790 Broadway, New York 19.

SALARIES FOR HEALTH EDUCATORS

The Health Education Section of the American Public Health Association has for 2 years had a Subcommittee on Salary for Health Education Personnel. A first report on recommended starting salaries for 6 grades of community health educator positions was presented at the A.P.H.A.'s Annual Meeting in 1948, and adopted by the parent committee (*A.J.P.H.* 39:4:532 1949).

A second report of the subcommittee was unanimously adopted by the parent committee on planning for health education at the 77th Annual Meeting in October, 1949. Particularly coming from health educators, it has a cumber-

some title, "Report on Classification, Qualification Requirements, and Fixation of Minimum Starting Salaries for Health Education Media Personnel." It represents however a starting point in the setting of salaries for such auxiliary health education personnel as editors, artists, photographers, librarians, audio-visual specialists, and similar "media" personnel. Salaries are suggested for 5 grades of such workers.

The study is in mimeograph form and is presumably available from the committee chairman, Dr. Alfred K. George, University of Cincinnati College of Medicine, Cincinnati 19, Ohio.

VIRGINIA CITIES' SALARIES

Salaries and Personnel Policies of Health Personnel in Virginia Cities is a study recently made by the Health Officers Section of the League of Virginia Municipalities. It has a special significance beyond its obvious one, namely its evidence of interest in the public health personnel situation by a group interested in the broad aspects of municipal administration.

The purpose of the study is described thus: "It is hoped that the information here presented may serve as aid to the directors of city health departments in obtaining salary increases and generally strengthening their personnel structure." It is based on the 10 largest cities which make up more than a fourth of the state's population. Salaries and personnel policies applying to health officers, nurses, and sanitarians are studied and related to those of the same 3 groups of workers in the 33 county or district health departments that operate in accordance with personnel standards of the Virginia State Department of Health.

There are some interesting findings. For example, in cities the median salaries for 5 qualified and for 5 non-qualified health officers, as defined by state health department standards, are exactly the same. In counties, however, median salaries for the 9 qualified officers are nearly as high as for city health officers, and one-fifth higher than the median for 24 non-qualified health officers. Personnel practices generally included in a merit system were lacking in more than half of the cities.

Another item of interest is the attitude of administrators toward merit systems. Among 7 city managers queried on this matter only 2 each were unqualifiedly in favor of a merit system and 2 were definitely opposed; the remaining 3 not being opposed but doubting its practicability.

The study was made by S. D. Sturkie, M.D., Secretary of the health officer section of the League of Virginia Municipalities and a copy is presumably available from him. He is Health Officer of Albemarle County-Charlottesville Health Department, Charlottesville, Va.

NUMBER OF PUBLIC HEALTH NURSES

The annual report of the Public Health Service on number of nurses employed in public work in the United States was recently issued. In the five years, 1945–1949, the total number increased from 20,800 to 23,400, a total of 12 per cent. The largest increase of 40 per cent took place among nurses of urban local official agencies, who employed nearly one-third of all the nurses. Both counties and cities without nurses engaged in full-time public health work were more numerous in 1949 than in 1945, though less numerous than in any of the other three of the five years. The detailed report of 14 offset pages bears detailed analysis and is available from the Public Health Service, Washington 25, D. C.

Credit Lines

CONFLICT IS VITALITY

The *Survey Magazine* which is the outstanding professional magazine in the social welfare field, broadly defined, devotes the most of the Common Welfare section of its Christmas, 1949, issue, to a summary by Haven Emerson, M.D., of the A.P.H.A.'s 77th annual meeting in New York in October, 1949. It is significant that the body of social workers, whose interests are not primarily in the health field, should know of the Association, its annual meeting, the variety of its sections, and most of all its importance and its vitality. Dr. Emerson uses as the touchstone of its vitality the objective discussions of pressing problems even within the framework of deep disagreement about one of the most controversial issues of the day—the relation of medical care to public health practice. It is further significant that, although their views on this subject do not correspond with those of Dr. Emerson, the *Survey* editors nevertheless give generous space to him. They apparently recognize the fact, as Dr. Emerson does, that the Association's vast umbrella of interests and its annual meeting, which is more and more made up of panel discussions and workshops, cannot be ignored by the social work world. They too believe that "there are no signs of senility in the 77-year-old professional forum and conscience of preventive medicine which is the American Public Health Association."

PUBLIC HEALTH IN POLAND

Whatever may be the effects of the "iron curtain" in other areas, in the field of public health Poland tells its story. The Polish Information Service has just distributed in English a 31 page mimeograph report on *Public Health in Poland,* the fourth in a series on social developments in post-war Poland. The earlier ones dealt respectively with trade unions, social legislation, education, and social welfare and a forthcoming one will deal with housing.

In the current report the organizational structure of Poland's public health is described—county health departments responsible to district departments which in turn are responsible to the national Ministry of Health. Its health insurance plan, first adopted in 1919, is also described. Most immediately of interest, however, is the story of the post-war reconstruction of health services and of the population's health following the almost complete destruction of health and training facilities and the wholesale decimation of doctors during the war. For example, the tuberculosis death rate for the country had already declined to 11.8 per 10,000 in 1947 as compared to 16.0 in 1938, although it had gone up to 50 in Warsaw in 1943–1944. Polish Research and Information Service, Room 1424, 250 W. 57 St., New York 19.

25,000,000 INFANT CARES

In a ceremony in San Francisco on November 14, 1949, Mrs. Paul Marlais of that city was presented the 25 millionth copy of *Infant Care* by Leona Baumgartner, M.D., Associate Director of the U. S. Children's Bureau. Participating in the ceremony was Mrs. Max West who wrote the first edition of this "best seller" in 1914. The first year it was published 63,000 copies were distributed; in 1949 at least 1,600,000. It has gone through 7 revisions and been translated into 8 languages during the 35 years of its existence; the changes themselves are a historical record of the growth in knowledge about infant care. *Infant Care* is one of five Children's Bureau booklets for parents on child

care, from the prenatal period through adolescence. They are *Prenatal Care, Infant Care, Your Child from One to Six, Your Child from Six to Twelve,* and *Guiding the Adolescent.* The first three are 15 cents each, the latter two, 20 cents. U. S. Gov. Ptg. Office, Washington 25, D. C.

1949 FACTS ABOUT NURSING

This annual book of facts has been prepared by the American Nurses Association in cöoperation with the five other national nursing organizations. The section on public health nurses indicates a total of 23,373 public health nurses employed in the United States in 1949, over half of them by local health departments and one-fifth by local school boards. The public health nurses represent less than 10 per cent of the nearly 300,000 actively engaged in nursing. There are chapters also on professional nurse education, counseling and placement, hospitals and medical care plans, and auxiliary nursing service as well as a brief discussion of the number of nurses in other countries. American Nurses Association, 1790 Broadway, New York 19, 50 cents.

RECOGNIZING ONE'S ALLIES

The Social Service Department of the Wisconsin Anti-Tuberculosis Association is distributing to case workers in the state's tuberculosis sanatoria a 3 page mimeographed memorandum on "Self Help Enters Treatment of Tuberculous Alcoholic." This is a series of case histories illustrating the value of Alcoholics Anonymous in specific cases as well as some of the disturbing factors of drink in the tuberculous patients' lives. 1018 N. Jefferson St., Milwaukee 2.

REHABILITATION RESOURCES

"The role of the private medical practitioner in the rehabilitation of the tuberculous has not been given the attention it deserves." To correct this situation the New Jersey Tuberculosis League, reportedly the first state tuberculosis association to do so, has prepared a booklet on *Rehabilitation of the Tuberculous in Private Medical Practice.* This has been distributed to the practising physicians of the state by whom nearly half of all tuberculosis patients are reported. It portrays the state's rehabilitation resources and tells in some detail the operation of the State Rehabilitation Commission which, with the State Medical Society, sponsored the pamphlet. New Jersey Tuberculosis League, 15 E. Kinney St., Newark 2.

OUR ALLIES ARE MANY

The following item in the December *West Virginia Health News* is an interesting example both of persistence and of the various allies that are available in building a community health program: "A permanent dental clinic was opened December 4 at Boyd Junior High School in Charleston. Co-sponsored by the State Department of Health, Bureau of Dental Health, and the Kanawha County Board of Education, the clinic is the fruit of a 14 year campaign of the Delta Sigma Theta sorority."

PRAISE FROM AN EXPERT

Credit Lines is indebted to its neighbor a few pages to the right, sprightly annotator Raymond S. Patterson, Ph.D., for the following: "A milestone has been passed! An annual report has been issued in the same year of the accounting. 'New Haven's Health 1949' in the January issue of *Health* reached my desk today, December 30. Imagine the bravery of a man who had begun his report with 'There have been no unusual epidemics during 1949' and having the sentence printed while there was still a week or two when the heavens might fall on his head. Such bravery deserves wide recognition. Incidentally the report is a straight-forward,

undramatized, and an unglamorized recounting of the highly successful twelve months of local health administration."

SCHOOL LUNCH AS EDUCATION

Looking like a spring salad in its green and yellow cover, *Growing Through School Lunch Experiences* would seem to have everything needed in a curriculum guide on school lunches. It explores fully — and interestingly — the teaching possibilities inherent in a school lunch program. Published by the Florida State Department of Education, the pamphlet was prepared by a committee of educators at Florida State University with assistance from a host of persons and agencies, including the State Health Department and the director of its Nutrition Investigations and Services, Walter Wilkins, Ph.D., Supervisor of School Lunch Programs, Florida State Department of Education, Tallahassee.

IS THE HEALTH DEPARTMENT NEXT?

New Rochelle is a city of some 65,000, one of four large cities in Westchester County (New York) which has a total population of well over half a million. It consolidated its welfare services with those of the county on January 1, the last of the cities to do so, thus creating a single welfare department for this suburban county. It will be interesting to see whether a similar consolidation will take place in health services. In this area New Rochelle is one of three cities which has a municipal health department separate from the county department.

ANNUAL REPORTS

Public Health in Ulster County is "our story for the first two years" of the Ulster County (New York) Department of Health first organized in January, 1947. This report has a nice balance between text and illustration and should give the Ulster County citizens a real understanding of and interest in their community health department. The principle underlying the operation of this county health department might well serve as a universal guide "All of our health service programs were planned and carried out with these three guide posts in view—the needs of our people, the wishes of our people, and our community facilities." Ulster County Department of Health, Kingston, N. Y.

Good Health, the seventh annual report of the Will County Health Department, is worthy of mention for the high quality of its production, its humorous illustrations, and its straightforward reporting to citizens. Will County Health Department, 21 E. Van Buren St., Joliet, Ill.

A *Quarterly Report, July–August–September, 1949*, of the Bolivar County (Mississippi) Health Department tells its story quite differently. Although the material is mimeographed and the illustrations very simple, in fact almost amateurish, it nevertheless gets its story across. For example, it reports the results of a syphilis testing survey in which more than 18,000 persons were surveyed. Of these, nearly 12 per cent were referred to the Rapid Treatment Center and nearly three-quarters of those referred received treatment. The report includes a telegram from the Public Health Service congratulating the state health officer on 3,158 patients admitted to the Rapid Treatment Center during August, 1949, and indicating this as the all-time record for RTC admissions in any one month. Although it is not mentioned in the report, the headquarters of the Bolivar County Health Department are in Cleveland, Miss.

Good Health in East York-Leaside, 1948, is the annual report of a Canadian health unit made up of two municipalities with about 65,000 population in

the metropolitan area of Toronto. This report is of interest because it fills in the sociological framework within which the health services operate and because of the matter-of-fact way in which consolidated units are dealt with. East York began its health services in 1940; in January, 1947, the service was extended to include Leaside through a coöperative agreement between the two municipal councils. William Mosely, M.D., D.P.H, is the health officer.

Annual Report of Personnel Board 1948–1949, State of Washington is a detailed report with many charts and tables. Aside from its particular relevance for Washington it has general usefulness as a source of information on how personnel and civil service boards operate. Washington State Personnel Board, 1209 Smith Tower, Seattle 4.

WORTH ACQUIRING

A Selective Bibliography on the Welfare of Older People is prepared as of July 1, 1949, by the Welfare Council of New York City. This is an important publication for those working with the aged. Among the 10 sections into which the *Bibliography* is divided, the one on "Health" lists a body of experience and knowledge in relation to the psychological and social aspects of health, as well as recent literature on the role of nutrition. Among other sections are social and personal adjustments, housing, case work, and counseling. Welfare Council of New York City, 44 E. 23 St., New York 10, $1.

Mental Health Is a Family Affair—This is No. 155 of the Public Affairs Pamphlets and was prepared by the Public Affairs Committee in coöperation with the National Mental Health Foundation. It proposes to tell you

—what causes many personality problems in families
—how some new ideas in the community are helping families to prevent these problems
—how this can help you and yours to mental health

specifically does not tell you

—where to go for psychiatric advice
—how to "analyze" yourself and your family
—a sure-fire way to avoid mental illness

Its authors are Dallas Pratt, M.D., and Jack Neher. Public Affairs Committee, 22 E. 38 St., New York 16, 20 cents.

Coördination of School and Community Health Services—The significance of this pamphlet is not only its content which describes fully how health and education departments may work together to achieve a total effective community health program, but also in the fact that a state, New York in this instance, has a State Interdepartmental Health Council, a Subcommittee on Coordination of School and Community Health Services of which prepared this report. This subcommittee was made up of representatives of the state health, education, social welfare, and mental hygiene departments and the Joint Hospital Survey and Planning Commission. Office of Public Health Education, New York State Department of Health, Albany, N. Y. For wide distribution in New York State without charge. No information on out of state distribution.

The American Family, A Factual Background—This is the material that was developed by an interdepartmental committee of governmental agencies to provide a factual background for the deliberations of the National Conference on Family Life, held in Washington in May, 1948, to discover specific means by which the American family might be strengthened for the benefit of its individual members and society. The conference, it will be remembered, was called by 125 private agencies concerned with the welfare of the family. Its nearly 500 pages of mimeographed material is divided into 7 separate subjects, one of which "Family Health" was pre-

pared by the Public Health Service with the assistance of the Children's Bureau. U. S. Gov. Ptg. Office, $1.25.

Books in Print on Rehabilitation—This *Bibliography* was distributed at the Library Exhibit of the annual meeting of the National Society for Crippled Children and Adults in New York in November. It is now offered for general distribution without charge. National Society for Crippled Children and Adults, 11 S. La Salle St., Chicago 3.

Looking Ahead to Marriage is the latest item in the Life Adjustment Booklets prepared by Science Research Associates (228 S. Wabash Ave., Chicago 4). Intended for teenagers, it gives them help in making it come true that "they lived happily ever after." An instructors guide is a part of the unit—60 cents.

Do Cows Have Neuroses was written by a layman, June Bingham, for the Mental Hygiene Association of Westchester County (New York) for use in its community education program. The answer is "no" for cows but "yes" for people, any people—"every single human being has a point beyond which he can not be pushed without losing his emotional balance." Written for the layman in his language, it takes the taboo out of mental illness. There are pictographs of normal, neurotic, and psychotic reactions to a variety of common human situations. The emphasis is upon getting treatment for this illness as for any other. It is being widely distributed by the National Committee for Mental Hygiene. Westchester County Mental Hygiene Association, County Office Building, White Plains, N. Y., 25 cents. Rates for quantity orders.

"Britain's Pioneer Health Center" in the October, 1949, *American City* is the story of the Peckham experiment. This is a health center in a 2,000 family housing project on the outskirts of London. This "positive health" project was started 20 years ago by Drs. Scott Williamson and Innes Pearse who call it "the first laboratory in the world for the study of human health." The author of the *American City* article is Bleecker Marquette who is the Executive Secretary not only of Cincinnati's Public Health Federation but also of its Better Housing League. The article has been reprinted, and reprints are presumably available from the author, 312 W. Ninth St., Cincinnati.

Food for Health as We Grow Older is prepared by the nutrition division of the Community Service Society of New York. It is designed as a food guide for the older person particularly with a low income. Perhaps its chief virtue is its simplicity both in language and eye effect and its human understanding. We like "Those who pursue eating well as one of their hobbies will find that it will create many new interests as well as bring rich rewards in better health." There are suggestions about menus, equipment, storing of foods, etc. In fact, you can almost see the little old lady puttering proudly in her shiny kitchen no matter how primitive. Community Service Society, 105 E. 22nd St., New York 10, 25 cents.

BOOKS AND REPORTS

All reviews are prepared on invitation. Unsolicited reviews cannot be accepted.

Temperature and Human Life—*By C.-E. A. Winslow and L. P. Herrington. Princeton, N. J.: Princeton University Press,* 1949. 272 pp. Price, $3.50.

About 35 years ago, the objective of ventilation was the dilution and removal of hypothetical dilute organic poisons exhaled from the breath of human beings and animals. At that time, the senior author of this book became interested in this subject and as chairman of the New York State Commission on Ventilation, conducted the first detailed American studies in this field. One of the most fundamental conclusions of the investigations of the Commission was the confirmation of the fact that the true objective of ventilation lay in the removal of heat from the human body and the production of a comfortable heat-removing aerial envelope.

The studies made some time later in the laboratory of the American Society of Heating and Ventilating Engineers at Pittsburgh, delineated certain aspects of the process of heat removal from the human body, namely, the heat loss by evaporation and by radiation, conduction and correction combined.

Starting in 1932, the authors of this book, with the assistance of a physicist, engaged in a long-range program of studies on the physiology of heat loss from the human body.

The present volume presents a complete summary of what is known today about this subject. The only portion of the field not treated in a very detailed fashion is that dealing with the effects of high temperatures on the human organism.

It is difficult to set forth a detailed account of the scope of this book in a brief review. One is tempted to do this because of the many important problems which are discussed and the many interesting facets of the problem which are disclosed by the painstaking analyses presented.

The production of heat in the life process is analyzed in its relation to energy, basal metabolism, muscular work, and fever. Then, the avenues of heat loss from the body are discussed in great detail. Here, the authors present their own classical work on partitional calorimetry by means of which they disclosed the quantitative aspects of heat loss by radiation. This represents the first successful attack on this problem ever made.

The adaptation of the human body to various thermal conditions, both heat and cold, comprise chapter three. A valuable portion of this section deals with future problems in this field.

Another section of the book which includes much original work of the authors is that dealing with the thermal protective influence of clothing. Under ordinary winter conditions, the problem of indoor ventilation is one of heat loss from the human body. On the other hand, in cold, outdoor climates, the problem is reversed and the conservation of body heat is of importance. In World War II, the Army and Navy were faced with practical problems in this field. A beautiful summary is presented on this subject, including the authors' original work on the measurement of clothing insulation which proved of great value to the armed forces.

"The Influence of Climate and Season Upon Health" is a scholarly discussion of the subject and, in the writer's opinion, there is no more concise and critical evaluation of our knowledge than that presented in the present volume. To those deeply interested in this subject, the analysis of the work of

Mills should be particularly enlightening for the fallacy in Mills's work on "Climatic Drive" is laid bare.

The field of science progresses by a series of small accretions to the body of total knowledge but the picture as a whole does not become clear until a critical mind and a facile pen fits the pieces together and unfolds the scene much in the way of a talented artist. The present volume does this for anyone with interest or mental curiosity in the field of the physiology and the effect of heat on the human mechanism and its bearing on health.

LEONARD GREENBERG

Practical Dairy Bacteriology—*By Paul R. Elliker. New York: McGraw Hill,* 1949. 391 pp. Price, $4.00.

By dealing with the occurrence and distribution of microörganisms in nature, and their morphology, reproductive stages, growth requirements, inhibitions, etc., the author orients the college short course and inservice dairy student, milk inspector, and the dairy plant operator in microbiology. After distinguishing between the useful, the undesirable but nonpathogenic, and the disease producing types, the practical means to prevent the occurrence and growth of the unwanted species is reviewed. The elementary methods for isolating, cultivating, and studying microörganisms in pure cultures precede a detailed explanation of why milk offers such a good habitat for a large variety of species. The common, undesirable changes caused by the growth of microörganisms in milk are then characterized.

Chapter 6 deals with recognized methods for determining the sanitary quality of milk and milk products. Chapters 7 to 13 inclusive are expanded for the guidance of plant operators to include nearly all sanitary phases of the care and production problems of market milk and cream, and of the processing problems associated with the manufacture of butter (including butter cultures), cheese (including cheese starters), fermented milks, evaporated, condensed, and dried milk products and frozen desserts. The last chapter contains a timely discussion of the nature of unclean deposits on dairy utensils, the characteristics of the various chemical detergents and sanitizers recommended to prevent uncleanliness, and the ways to produce and maintain practical sterility of all equipment prior to direct contact with milk or its products during production and/or processing.

The subject matter is well organized for the purpose intended, is printed on high gloss, bleached paper with headings and subheadings in bold face type, shows originality, and is well illustrated. By direct style presentation, the author has avoided controversial details with exhaustive documented references often suggestive of unsolved problems to the advanced student in dairy bacteriology.

A. H. ROBERTSON

Education for Safe Living—*By Herbert J. Stack, Elmer B. Siebrecht, and J. Duke Elkow. (2nd ed.) New York: Prentice-Hall,* 1949. 437 pp. Price, $3.75.

Addressed primarily to school administrators, this second edition continues to be the leading textbook in the field of accident prevention. Those engaged in any field of safety will find in this text a complete orientation in the subject.

Through 26 chapters the authors and their 16 co-writers show needs and opportunities for education in safety, particularly in and about the school, also in traffic safety as it concerns pupils, and in the home and on the farm. Each chapter concludes with suggested projects and activities and a list of references.

The history of the safety movement in this country has been rewritten to date by Dr. Stack. Mention is made

of the national conferences called by President Truman covering traffic and industrial safety and fire prevention.

The interest of various branches of the federal government, recently shown in safety, is mentioned with their respective contributions. Mention also is made of activities in state and city agencies including those of health departments.

The authors point out that "almost every branch of local government is concerned to some extent with safety." They show also that the problem of accident prevention is so great that "there is need for everyone's contribution." A central coördinating agency or safety council is recommended, and the school safety committee is recognized to be a division of this council.

The text closes with an effective chapter on methods of evaluation for measuring the results. Illustrations, good type, and an index invite attention and add to the usefulness of this important book. ETHEL M. HENDRIKSEN

Fish and Fish Inspection—*By John D. Syme. London, England: H. K. Lewis & Co., Ltd.*, 1949. 162 pp. 90 illus. Price, 18*s* net.

This clothbound book is a concise but exhaustive treatise of the fishing industry in Great Britain. The first three chapters deal interestingly with fundamentals of the industry; the fishing vessel, the fishing grounds, and the fishing gear are described in detail. This is followed by a carefully construed and well illustrated section on the characteristics and differentiation of the species of salt water fish which are commonly landed in Britain.

The inspection of fish is thoroughly dealt with under various aspects, such as organoleptic examination, the diseases, and the parasites of fish. Shellfish is briefly discussed from the standpoint of pollution in a special section in which the routine method of cleansing shellfish as developed and authorized by the British Ministry of Agriculture and Fisheries is outlined. The author then gives detailed accounts of the various procedures pertaining to the marketing of fish. These are under such headings as the preparation, the transportation, the smoke curing, the salting, the processing, and the distribution of fish.

Various methods of quick freezing and canning fish are dealt with at length in respective chapters. The final chapter is an outline of the main legislation in the Food and Drugs Act, 1938, and of the Public Health Regulations, 1934, and the various Orders under which the inspection of fish is carried out.

The book is written in a pleasant style, as free as possible from scientific terminology. The matter has been obviously, most carefully prepared, and is presented so as to hold the interest of the reader. It should serve as an excellent textbook for the student, an authoritative manual for the fish inspector, and as good informative reading for the general worker in public health on the many activities and the complexity of the fishing industry, when it is one of the primary industries of a nation such as Great Britain. J. NAUBERT

The Family in a Democratic Society—*Anniversary Papers of the Community Service Society of New York. New York: Columbia University Press*, 1949. 287 pp. Price, $3.75.

In an effort to look ahead, the Community Service Society has brought together, on the event of its 100th anniversary, the papers of two symposia, "Human Relations in Science and Practice" and "Health and Family Life." "The Family in Tomorrow's World" was the theme of the anniversary observance. There is a companion volume "Social Work as Human Relations," which is the result of a third symposium.

The symposia "were designed to increase understanding of the present problems of social welfare and contribute

to a more effective approach to these problems, by drawing upon knowledge and experience now available in the medical and social sciences and in the practice of social and health work."

This volume can have real significance to health workers who are ready to see their objectives and efforts in terms of total human values. It can provide a perspective which is not often afforded by the professional schools and normal field experiences of those in the health fields. The volume may be found particularly useful in in-service training in a wide variety of social fields, including health. Students in the professional schools will make extensive use of the material.

The part designated as "The Human Sciences and the Family" presents basic anthropological, economic, sociological, and psychological factors in family life, with due regard to changes which are occurring and their implications in terms of actual service. Child rearing as a science is discussed. The psychological aspects of adolescence are extensively explored, including details of the psychiatric problems encountered. The use of terms such as "the reorientation of psychiatry" and "preventive psychiatry" gives a hint as to the broad and still rather unusual approach to be found here.

"Health and The Family" is the title of Part II. The struggles toward positive health and the relationships to family life and the publicly provided services are discussed, somewhat philosophically at times. Throughout the volume reference is made to the Peckham Experiment, and an excellent paper is presented by its medical director. There are several suggestions for repeating a similar experiment here, with variations arising from the medical care patterns of this country. The difficulties of health appraisal in actual practice are presented. Nutrition of the family and the world is presented in some detail. A paper "Professional Interplay in Family Health" by Dr. Hugh Leavell is particularly provocative and the volume ends with a stirring historical paper by Professor C.-E.A. Winslow.

Such a collection of papers emphasizes the difficulties of communication when the vastly different experiences and the vocabularies of anthropology, psychology, psychiatry, and epidemiology converge on a common problem. There is also a wide variation in the papers, from technical details of methodology to broad generalities with less documentation. There is some inevitable repetition. The papers however are, in general, definitely superior and deserve study by serious students of the social and health fields. ROSCOE P. KANDLE

Public Health Statistics—*By Marguerite F. Hall. (2nd ed. rev.) New York: Hoeber,* 1949. 441 pp. Price, $7.50.

The changes which have been made in the second edition of this book consist primarily of the addition of new material to the text of the first edition. The original text, however, has remained largely unchanged as has the general plan of organization. This is regrettable for, as reviewers of the first edition have pointed out, the author's desire to simplify the presentation of statistical ideas has been permitted to interfere with the logic of the argument, resulting in many unsound statements which have not been corrected in the second edition.

The tabular material in the second edition has been brought up to date, a chapter has been added on the application of life table techniques to public health problems, and the chapter on correlation has been expanded to include some examples of the use of the regression equation in prediction. In the discussion of estimation of the size of sample for a given problem, a section has been added to point up the knowledge that is required before the sample

size can be estimated, viz: the approximate percentage "positive" to be expected in the sample, and the accuracy with which it is desired to make this estimate, including a statement of the odds to be set against exceeding the allowable sampling error.

The value of these additions would be greatly enhanced if the basic concepts upon which they depend had been reexamined and clarified. For example, fundamentally the life table depends upon the concept of a rate as a probability. It is difficult for this reviewer, therefore, to understand why the chapter on "Rates" follows the chapter on "Standard Millions" in which the life table is introduced. Further, on page 172, the statement is made that "a rate refers an event to that part of the population which is exposed to the risk of occurrence of that event, i.e., those persons who really experience the event." If this definition of "exposed to risk" were actually the case, every rate would have a value of 100 per cent. Again, on page 223, it is stated that the birth mortality index, as the sum of the stillbirth and neonatal mortality rates, "measures the chances in 1,000 live births that an infant has in being born alive and then surviving the first month of life." Such statements are misleading as to what is meant by "exposed to risk" and fail to express the basic notion of a rate.

In the new chapter on applications of life table techniques, it is indicated on page 272 that the procedure of following a cohort through life stresses "the constancy of age selection." It is true that such constancy is present in the data cited, but it would be much more apparent if the experience of a series of cohorts was shown graphically as in the original paper on this subject by W. H. Frost—to which, incidentally, no reference is made.

Reviewers of the first edition have discussed in some detail the logical difficulties encountered in the chapters concerned with the point binomial and measures of reliability. These have been carried over into the second edition (see the example on page 376 which was discussed in this JOURNAL 33:608).

Because of the difficulties indicated above, the book is not recommended for use either by the student or by the active practitioner of public health seeking a guide to the application of statistical reasoning in this field.

PAUL M. DENSEN

Life Among the Doctors—*By Paul de Kruif. New York: Harcourt, Brace,* 1949. 459 pp. Price, $4.75.

The story of achievement of a health officer or researchers in the laboratory or at the bedside; or of a county medical society dinner meeting in California's warm vineyard area, loses no glamour or human interest in the telling by Paul de Kruif. He does not permit ordinary people or events to march through his pages. His men are snow-white (or black) and they tower above their fellows as they fight their battles against disease germs, hidden starvation, entrenched interests, or just human apathy.

From the opening story of his attempt to persuade President Roosevelt to launch a national crusade against disease (Roosevelt: "We'll need all the money for guns") to the chapter, "What Sid Did" (a postscript to "Kaiser Wakes the Doctors") there runs a conviction against compulsory health insurance (too expensive and likely to freeze into permanency the "one man cure shops"), and for voluntary prepayment, with service by competent medical groups and modern facilities.

Medical politicians, B.T.O.'s and B.C.M.'s (you find out what they are) are the blacks whose apathy and opposition strengthen the determination of Tom Spies in his fight against malnutrition, of Al Coburn in his researches on rheumatic fever, and of Leo Lowe

when he showed the value of big doses of penicillin against subacute bacterial endocarditis, just as Herman Kabat's physical therapists provide the opposition that develops the weakened muscles of spastics and multiple sclerotics.

Violent exception will be taken to some of the author's "facts" and that he has chosen thus to publish them, but all will agree that the de Kruif sparkle has not dimmed.

The book has no preface or foreword, but there is a statement two pages preceding the Table of Contents about a *certain* "spokesman." It would be curious if the author were to be covered with a part of the "spokesman's" mantle. WILTON L. HALVERSON

Principles of Sanitation Applicable to the Construction of New Vessels. *Washington: Federal Security Agency Public Health Service, Division of Sanitation,* 1949. 101 pp.

This text, in manual form, supersedes one of a similar type published July 1, 1947, titled, "Administrative Guide for Plan Approval, Inspection and Certification of Vessel Sanitation." The author, the Public Health Service, is recognized as the pioneer organization and the authority in the field of ship sanitation. The new manual gives a comprehensive presentation of the principles and standards which are requisites for a sanitary environment aboard vessels.

For the purpose of this review, the contents may be grouped into three general sections. The first relates to water and discusses the three systems commonly found aboard ship—that of the potable water, the wash water, and the sanitary (overboard) water. Included in the second section are miscellaneous subjects such as: galleys, pantries, sculleries, food handling and storage spaces, plumbing, swimming pools, accommodations, heating, lighting and ventilation, and general sanitation. The third and largest section relates to ratproofing which is covered in detail, having numerous diagrams illustrating the structural features involved.

It is believed that this manual demonstrates the need for the inclusion of a course in vessel sanitation in the curriculum of engineering schools, not only for students in the field of public health engineering but more particularly for those studying marine design and naval architecture. The manual could readily be expanded into a text suitable for classroom use.

The material contained in the manual likewise is worthy of study by an appropriate committee within the World Health Organization with a view toward its adoption as an international code applicable to vessel construction.

RALPH CLELAND

Training in Community Relations Toward New Group Skills—*By Ronald Lippitt. New York: Harper,* 1949. 286 pp. Price, $3.50.

This volume is a careful record of a workshop held by the Connecticut Interracial Commission with the assistance of the research staffs of the Commission on Community Interrelations of the American Jewish Congress and of the Research Center for Group Dynamics.

In an effort to improve relations between different racial and religious groups and to determine better usage of human relations skills, the Connecticut Commission on Race Relations sponsored a two week workshop of lay committee members, social workers, and educators. Dr. Lippitt gives an interesting and practical report of the conception, development, and organization of the workshop in a way that should be of value to public health workers, many of whom are realizing the application of the work of Dr. Lippitt and the late Kurt Lewin to the field of public health, and who have been using group dynamics, role playing, workshops and techniques of working together more successfully with groups in recent years.

Granted that most public health workers will not have the opportunity to conduct a workshop over a period of ten consecutive full working days as the Interracial Commission was, all public health workers are trying to arouse public opinion and stimulate community action. The description and analysis of the techniques used in this workshop may show the alert health officer how the local health council can be made more effective, the sanitarian how to help restaurant owners to see the value to them of sanitary practices, the voluntary health agency executive how to obtain more active participation by his board members, and the other health workers how to work better with each other and the general public. Scientific knowledge is ahead of public health practice. Perhaps the application or adoption of the methods of Lippitt and his colleagues can help to arouse public interest to correct this situation.

MURIEL F. BLISS

The National Health Service—*By Charles Hill and John Woodcock. London: Christopher Johnson,* 1949. 16s.

No topic has been subjected to more uninformed and emotional discussion than the British National Health Insurance Act, and it seems likely that in the next few months we shall be flooded with reports from American visitors who have learned all about the matter during a busy week in London.

It is always well to check such impressions against the facts. Dr. Hill and Mr. Woodcock in the volume here reviewed give a complete and factual outline of what the Act actually provides and the machinery of its administration. The volume contains no discussion of opinion or evaluation. It is obviously not intended for light reading. To the serious student of the subject, however, it would be useful to have this convenient summary for reference.

C.-E. A. WINSLOW

Malaria: The Biography of a Killer—*By Leon J. Warshaw, M.D. New York, Toronto: Rinehart,* 1949. 348 pp. Price, $3.75.

If it takes anything to prove that malariologists are not made in libraries, this book does it! The author is a physician practising in New York City. He has found the time to read a considerable number of books and articles about malaria. He has merged his literary findings into a picturesque but not very critical account of developing knowledge about the disease. The major part of the book—almost nine-tenths—deals with the cause, transmission, symptomatology, and prevention of malaria. In the main, this is excellent. It is well and interestingly written and, as far as the reviewer can judge, a faithful piece of reporting. Perhaps the most serious criticism of this section is Dr. Warshaw's frequent failure to give credit to the authors whose works he quotes or paraphrases so freely.

The rest of the book deals with the influence of malaria on history—always an interesting but highly speculative topic—and with the present incidence and significance of the disease. It is with this last that malariologists, public health authorities, and some practitioners in the South may take violent exception.

The most quotable line in the book, according to American reviewers, is Dr. Warshaw's statement (p. 6) that "it is estimated that throughout the country there is an average of 4,000,000 cases every year." Again, the good doctor forgets to mention whether this is his own estimate or that of someone else—but it sounds strangely similar to one made in 1938 based on conditions prevailing during the last peak prevalence of malaria in this country. Without arguing the validity of these figures for that period, it is preposterous to claim that they represent current conditions. Dr. Warshaw either is not aware of, or

chooses to ignore the uniformly downward trends of reported malaria mortality and morbidity in this country since 1936. From 1945 to 1948, inclusive, the malaria cases reported by years for the nation totaled 61,411; 47,903; 16,205; and 9,868—including extracontinentally acquired infections—and there is good reason for believing that the numbers of indigenous cases are spuriously high. Admitting the numerical fallibility of malaria case reporting, it is hard to make anything like four million out of these figures.

Dr. Warshaw has also failed to inform himself about the antimalarial programs carried on by the various southeastern state health departments during and since World War II in coöperation with the U. S. Public Health Service. Since 1947 these operations have been continued with the object of eradicating malaria as an endemic disease from this country. The federal, state, and local appropriations made for the support of these programs does not indicate a "false sense of security" or "complacency" regarding the disease, or a "feeble attack on it" as indicated by the author of this book.

Dr. Warshaw is very pessimistic about the world malaria problem which, he states, is as serious today as it ever has been. This is scant acknowledgment of the splendid results already obtained in the malaria vector eradication programs now under way in Sardinia, Cyprus, Tobago, and Mauritius, and the vigorous malaria control programs in Venezuela, Brazil, Argentina, Panama, Mexico, Italy, Pakistan, and India, to mention only a few of the more outstanding developments. The World Health Organization is assisting many other nations in the establishment of strong antimalaria organizations and the application of modern therapeutic and insecticidal techniques and materials. Actual incidence data to support or refute Dr. Warshaw's contention are not available, but the consistent reports from these areas of diminishing malaria morbidity and mortality strongly suggest that the world malaria picture is significantly brighter now than it has been in the past.

Dr. Warshaw should have read further—or said less!

JUSTIN M. ANDREWS

Selected Papers of Haven Emerson—*Published on the Occasion of His Seventy-fifth Birthday by W. K. Kellogg Foundation, Battle Creek, Mich. For Sale by American Public Health Association,* 1949. 507 pp. Price, $3.00.

Very appropriately the colleagues of Dr. Haven Emerson chose to celebrate his seventy-fifth birthday by publication of thirty-nine selected excerpts from a bibliography of over two hundred scientific and philosophical articles, community studies, and surveys. The selections are well chosen and representative of the various chronological stages of Dr. Emerson's career. Some of his best articles and reports were, perforce, omitted, because of their comprehensiveness and volume. For example, one of Dr. Emerson's most important contributions to public health, *Local Health Units for the Nation* (Commonwealth Fund), 1945, can only be mentioned. The same is true of *Control of Communicable Diseases in Man,* which has been through many editions under Dr. Emerson's able chairmanship. *A General Survey of Communicable Diseases in the American Expeditionary Forces,* 1919, and many other important papers are not included.

Few of his close associates realized the versatility of Dr. Emerson's contributions. The reason is that each of us has come in contact with only one phase of his diverse activities, and for a relatively short segment of his very long span of more than fifty years of scientific activity. Most of us tend to limit ourselves to a narrow specialty in preventive

medicine or public health, and we live a relatively short time, but Dr. Haven Emerson has never been a specialist. In fact, he can best be characterized as our greatest *general practitioner* of public health of this generation.

The items that have been selected in the *Selected Papers* are in reality excerpts from various phases of Dr. Emerson's life. They begin with research in basic science. They extend to his interest in the field of vital statistics. Epidemiology has been a lifelong pre-occupation, and is well represented by several papers. Dr. Emerson became Health Commissioner of New York City in 1917, and this phase of his life, in which public health administration predominated, is well presented. He thought about prevention of heart disease in 1921, mental hygiene in 1922, and gave early consideration to periodic physical examination of the well adult. In this field, he was twenty years ahead of his time, and it must be confessed that, at intervals, he received the buffeting customarily reserved for *prophets,* because he was interested in the broad social aspects of medical care before most of its present protagonists were born.

During Dr. Emerson's long career, he took time out to have a bout with pulmonary tuberculosis, and one of the most interesting papers of all the series is number thirty-five, "A Family Story of Five Generations of Tuberculosis."

The last articles in the book are a summation of Dr. Emerson's life experiences, and an application of his profound knowledge to basic principles. He became a great teacher, and organized a graduate school of public health. Through his community studies and nation-wide surveys, he promoted sound public health throughout the whole land. All these things are adequately presented in the *Selected Papers.*

As Dr. Emerson has indicated in his foreword, a man's expression of his life is in his work: "By their works ye shall know them" may be truly said of this great *General Practitioner of Public Health.* W. G. SMILLIE

Survey of Biological Progress. *Vol. 1—By George S. Avery, Jr., Editor-in-Chief. New York: Academic Press, Inc.,* 1949. 396 pp. Price, $6.00.

This is the first volume of what is expected to be an annual survey of biological progress. Its purpose is to serve biologists who wish to be well informed in fields marginal to or beyond their own special sphere of interest. The hope of the survey is "to offset in a certain measure the isolating effect of rapidly increasing specialization." The Editor is from the Brooklyn Botanic Garden and he has the assistance of some very outstanding persons.

Scarcely any reader will fail to recognize the growing complexity of the life sciences. There are chapters on the genes, on tracer methods in biological research, on nutrition and reproduction, on growth and development, on virus tumors, on hormones and the differentiation of sex, on the influence of environmental factors on the vitamin content of food plants and ecological studies on populations. This is a book to broaden the horizons around the field of public health. REGINALD M. ATWATER

Measuring Nursing Resources— *By Lois E. Gordner. Washington, D. C.: Public Health Service. Division of Nursing Resources.* 1949. 117 pp.

The short title of this planographed material is somewhat misleading. The outlined scope for a state-wide study provides for the following: (1) Estimating the number of nurses currently employed; (2) the number required to meet needs; (3) evaluating the adequacy of the present system of nursing education; and (4) arriving at recommendations which will improve the quantity and quality of nursing personnel. The values of forming committees

and also how to keep them active are interestingly presented. Forms for securing useful information and methods for tabulating data secured by their use are clearly illustrated. Formulae, for the most part, are carefully explained and documented. The plans outlined in this study call for money and personnel, and also for the prompt coöperation of everyone in the state interested in studying nursing resources.

DOROTHY E. WIESNER

The Red Cross Nurse in Action—*By Portia B. Kernodle. New York: Harper,* 1949. 524 pp. Price, $5.00.

Into this account of Red Cross nursing from 1882 to 1948, Mrs. Kernodle has woven, with the authentic skill of the true historian, the dramatic events of epidemics, disasters, and wars along with the quieter activities of the home front. We have not had nursing history so carefully prepared and well documented in many years, yet the author has succeeded in retaining much of the color and human interest of actual nursing experiences so that reading is a pleasure, not a duty. Nor has she lost sight of her responsibility to interpret the meaning of the ever-changing demands on the Red Cross. We see within the framework of nearly 70 years, here and overseas, new policies emerge, outworn activities cast off, and a realistic program born.

Perhaps the most satisfying thing about this book is the feeling with which it leaves the reader: times will change and nursing programs are unpredictable, but so long as there is a Red Cross and so long as there are nurses there will be mutual, effective response to whatever needs arise. DOROTHY DEMING

The Rehabilitation of the Patient—*By Caroline H. Elledge. Philadelphia: Lippincott,* 1948. 101 pp. Price, $2.50.

This small book on rehabilitation holds the interest of the reader throughout its pages. The cases selected to illustrate the points in regard to the various aspects of rehabilitation which the author is discussing are actual, disguised case histories which team with vividness, humor, and pathos. They give validity and maturity to the author's presentation and succeed in showing the importance of team work between the persons representing various disciplines who pool their skills for the benefit of the handicapped patient.

The author uses the definition of rehabilitation of the National Council on Rehabilitation, namely that "Rehabilitation is the restoration of the handicapped to the fullest physical, mental, social, vocational, and economic usefulness of which they are capable." She shows that for the fulfillment of this purpose many specialized services and skilled persons are required, among them the medical-social worker. She brings out by the use of case material what a handicap means to a person and how others may help or hinder him in his acceptance of his disability. She shows how he can be helped to adjust to his limitations and those of society and how community resources properly used at the right time can encourage him and his family. She presents conclusively her major premise that the medical-social worker has a supplementary function to contribute to the rehabilitation team. A selected bibliography is added at the end which is helpful to anyone interested in the human and personal side of rehabilitation.

ELIZABETH P. RICE

Children with Mental and Physical Handicaps—*By E. W. Wallin. New York: Prentice Hall,* 1949. 549 pp. Price, $5.00.

This volume is concerned primarily with the mentally handicapped, and includes physical handicaps only as they are present in patients with conditions that may be associated with mental

handicaps as well, for instance in children with mongolism, cerebral palsy, or congenital syphilis. The only exception to this is a brief discussion of poliomyelitis, included because the author wished to point out the special educational requirements of the polio patient. The author does not discuss the psychological reaction of the individual to this mental or physical handicap.

The first half of the book is devoted to definition and classification of various mental defects and deviations—on the basis of psychological, etiological, statistical, and other criteria. The clearest chapter here is the one dealing with educability and socio-vocational competency of mental defectives. The discussions of intelligence, heredity versus environment, mental disease, and neuropathology which are included as a basis for understanding mental defect are not so clear and deal with the stated subjects in a selective and descriptive fashion.

The second half of the book, in which each chapter is devoted to a specific group of disorders, such as epilepsy, cerebral palsy, mongolism, cretinism, and metabolic disease, are much more readable—and a few of these chapters might constitute a helpful source for a reader interested in fairly rapid survey of the topic, with a few selected up-to-date references.

The author "attempts to supply the need for an up-to-date reference book for the intelligent lay reader and, particularly, for the professional workers in the fields of special education, handicapped children, mental defect, clinical and abnormal psychology, child guidance, mental hygiene, social service, psychiatry and pediatrics." He states the book "can also serve in the areas covered by advanced students in psychology, education and medicine and, more particularly, in special education, clinical psychology, mental and physical defect, orthopedics, and neuropsychiatry." In the attempt to address himself to such a comprehensive and heterogeneous audience, the author presents a large amount of well documented factual material and many theories and experimental data from the fields of psychology and education—but presents the material in a purely descriptive manner, except for the sections dealing with the education of handicapped children—a field in which the author seems to have a great deal of experience and a sound practical viewpoint.

This is an up-to-date textbook but, although it includes recent material, does not offer an integrated viewpoint nor an application of dynamic principles to the subject. BARBARA KORSCH

Commission on Chronic Illness—Proceedings of First Meeting, May 20, 1949.—*Chicago, Ill.: Commission on Chronic Illness.* 73 pp. Price, $.20.

This booklet documents an historic occasion when the Commission on Chronic Illness was set up growing out of the joint statement "Planning for the Chronically Ill" (*A.J.P.H.* 37:1256, Oct., 1947) of the American Hospital Association, American Medical Association, American Public Health Association, and American Public Welfare Association. In addition to general orientation about the program of the Commission there are reports from technical advisers in the fields of clinical problems, institutional care, non-institutional care, rehabilitation and convalescence, and community problems. The constitution and by-laws of the Commission are included. This is an excellent foundation on which the newly appointed staff of the Commission can operate. All public health workers should be familiar with this significant development. REGINALD M. ATWATER

A SELECTED PUBLIC HEALTH BIBLIOGRAPHY WITH ANNOTATIONS

RAYMOND S. PATTERSON, PH.D.

One Hundred and Twenty Millions—This is an ambitious, and successful, attempt to paint a picture of all the varied researches in the fields of cancer, heart diseases, polio, multiple sclerosis, arthritis, and other chronic diseases that were so long neglected. You'll like it.

CLOSE, K. On the Brink of Hope. *Survey* 85, 12:662 (Dec.), 1949.

Passing Fad, Perhaps—Is there any evidence to justify our voracious (national) gulping of vitamin supplements? Does the promiscuous swallowing of vitamin pills ever benefit public health? Can overindulgence cause harm beyond depleting the public pocketbook? Answers to these questions are given (or promised in the "to be continued").

CULVER, P. J. Vitamin Supplements in Health and Disease. *New England J. Med.* 241, 24:970 (Dec. 15), 1949.

Which Knitting Do We Stick to?—He says there isn't room for our Medical Care cousins under our public health rooftree, but he says it so politely, they'll find it hard to be offended by the seeming inhospitality. Don't miss this oblique comment on our recent New York meeting.

EMERSON, H. Growing Pains of Public Health. *Survey* 85, 12:667 (Dec.), 1949.

Master Work—Being an incurable (though aged) *Enfant Terrible,* I itch to bend the rule about limiting items here to those papers that appear in the scientific press. Well, this one breaks it irreparably. If you would like to see a beautiful example of sanitary science made enjoyable, and sometimes hilarious, don't miss this story about Gotham's current water shortage in that technical journal, the *New Yorker.*

GILL, B. The Gathered Waters. *New Yorker* 25, 45:24 (Dec. 31), 1949.

Epidemiology of Polio—By plotting polio reports from counties and then grouping the counties, it is revealed that epidemic risk decreases slightly from less to more populous counties in the north, but the opposite was true in the south. There is, of course, a great deal more here.

GILLIAM, A. G., *et al.* Average Poliomyelitis Incidence Reported in Counties of the U. S., 1932–1946 (and) Poliomyelitis Epidemic Recurrence in the Counties of the United States, 1932–1946. *Pub. Health Rep.* 64, 49:1584 (Dec. 9), 1949.

Millenially Speaking—It's getting hotter hereabouts. And heat is bad for us, physically, mentally, and morally. Maybe this information won't help you much in your struggles with the health hazards of Keokuk, Kankakee or Koukamonga, but you'll find the paper immensely intriguing—whether or not you are convinced.

MILLS, C. A. Temperature Dominance Over Human Life. *Science* 110, 2855:267 (Sept. 16), 1949.

It Can't Happen Here—Next time an epidemic in your county gets you down, remember this influenza A epidemic among the Eskimos of N. W. Territory (Canada). The attack rate was 100 per cent and the case fatality rate was 20 per cent.

NAGLER, F. P., *et al.* An Influenza Virus Epidemic at Victoria Island N. W. T. Canada. *Canad. J. Pub. Health* 40, 11:457 (Nov.), 1949.

"Future Unlimited"—There are more quotable passages in this felicitous address than I've run across in a dog's

age. Help yourself. Here's one: "I think I would worry less about taxes if more of them were going for hospitals, for health science and research, for the training of doctors, nurses and other life savers."

PARRAN, T. Spearhead of Public Health. *Pub. Health Nursing* 41, 12:631 (Dec.), 1949.

Good Yarn—"This is the factual story of how public and private health workers and officials of the local textile mills of Spalding County took action to have an effective health program for the entire community." And a too short story, I may add.

PETRIE, L. M., *et al.* The Griffin Plan. *Pub. Health Nursing* 41, 12:654 (Dec.), 1949.

Health Educators at Work—These 34 short stories about organizing communities, working with school health services, developing visual aids, and taking part in ventures in higher education combine to give a pretty good bird's-eye view of the modern concept of health education. Incidentally, they underscore the inadequacies of the word "education" as a fitting descriptive for the variety of enterprises now recognized as its field. But usage creates new meanings and it is unlikely that health education as an administrative entity will be helped by dubbing it public relations or some other current catch word.

RICKMAN, C. B. Give 'Em a Chance. (and 33 related papers). *High School Jour.* (No. Carolina). 32, 4:150 (Oct.), 1949.

Symposium on TB Case-Finding—Three complementary papers: one a follow-up summary, one on community organization, and one on procedures and results. We need plenty of these experience-meeting-type, reportorial accounts.

SCHUCK, M. H., AND AMES, W. R. Mass Chest X-Ray Survey (and two related papers). *New York State J. Med.* 49, 23:2775 (Dec. 1), 1949.

To Prevent Infantile Diarrhea—"The enforcement of the minimum standards for nursery care . . . is now the responsibility of the full-time health officer . . ." Should be, everywhere!

TRUSSELL, R. E. Diarrhea of the Newborn. *New York State J. Med.* 49, 23:2789 (Dec. 1), 1949.

Words of One Syllable Department—Even though you know all the answers, you may want this clear and concise explanation of the how's and why's of BCG vaccination to give, perhaps, to others less sure among your professional confreres or social pals.

SIEGEL, P. T. More About BCG. *Am. J. Nursing* 49, 12:753 (Dec.), 1949.

Diabetes Is Public Health—In Brookline (Mass.), and Jacksonville, (Fla.), demonstrations of the possibilities in a public health attack on diabetes have revealed that the welfare of the patient is served best through a close partnership of the practising physicians and the health agencies.

WILKERSON, H. L C. Diabetes Control in the Public Health Program. *New York State J. Med.* 49, 24:2945 (Dec. 15), 1949.

Go Thou and—Down San Antonio way they worked out an unique agency adequate to meet the grave social problems that confront the families of the tuberculous.

ZECK, J. Financial Aid and Case-Work Services to the Tuberculous Patient and Family. *Pub. Health Rep.* 64, 48:1541 (Dec. 2), 1949.

BOOKS RECEIVED

Listing in this column acknowledges the receipt of books and our appreciation to the senders. Space and the interests of readers will permit review of some, but not all, of the books listed.

BETTER CARE IN MENTAL HOSPITALS. Proceedings of the First Mental Hospital Institute of the American Psychiatric Association. Office of the Medical Director. Washington: American Psychiatric Association, 1949. 232 pp. Price, $3.00.

BLOOD CLOTTING AND ALLIED PROBLEMS. Transactions of the Second Conference January 24–25, 1949, New York City. New York: Josiah Macy, Jr. Foundation, 1949. 231 pp. Price, $2.25.

COCCIDIOSIS. S. Bracket, et al. Annals of the New York Academy of Sciences, Vol. 52, Art. 4. New York: N. Y. Academy of Sciences, Nov., 1949. 429–624 pp. Price, $3.00.

COMMUNICABLE DISEASE NURSING. Theresa I. Lynch (2nd ed.) St. Louis: Mosby, 1949. 776 pp. 131 illus. Price, $4.75.

THE EDUCATION AND WORK EXPERIENCE OF COMMUNITY ORGANIZATION PRACTITIONERS. Robert Irving Hiller. New York: Association for the Study of Community Organization, Community Chests and Councils of America, 1949. 61 pp. Price, $1.25.

HEALTH IN THE SCHOOLS. A Manual of the School Health Program. Boston, Mass.: Massachusetts Department of Education and Massachusetts Department of Public Health. 91 pp.

HYGIENE AND PUBLIC HEALTH, MANUAL OF. Parts I and II. Jahar Lal Das (4th ed.) Calcutta: Das Gupta & Co. Part I 1947 Part II 1948. 1102 pp. 10s gd.

IMMUNIZACION CONTRA EL TIFUS EXANTEMATICO. G. Clavero Del Camp and F. Perez Gallardo. Madrid: Graficas Gonzalez, 1949. 102 pp.

INDUSTRIAL MICROBIOLOGY. Samuel Cate Prescott and Cecil Gordon Dunn. New York: McGraw-Hill, 1949. 923 pp. Price, $8.50.

PAYMENT FOR PHYSICIANS' SERVICES UNDER CRIPPLED CHILDREN'S PROGRAMS. Franz Goldmann. Washington: Federal Security Agency, Social Security Administration, Children's Bureau. 77 pp.

MALARIOLOGY. Vols. I and II. By Sixty-Five Contributors. Edited by Mark F. Boyd. Philadelphia: Saunders, 1949. 1,643 pp. 436 illus. Price, $35.00 set.

PHYSIOLOGY, A SHORT HISTORY OF. Kenneth J. Franklin (2nd ed.). New York: Staples Press, 1949. 147 pp. Price 10/6d.

PHYSIOLOGY OF HEAT REGULATION AND THE SCIENCE OF CLOTHING. Edited by L. H. Newburgh. Philadelphia: Saunders, 1949. 457 pp. Price, $7.50.

PROBLEMS IN THE COLLECTION AND COMPARABILITY OF INTERNATIONAL STATISTICS. Papers Presented at the Round Table of International Statistics. New York: Milbank Memorial Fund, 1949. 165 pp. Price, $.50.

SMOG PROBLEM IN LOS ANGELES COUNTY. Second Interim Report by Stanford Research Institute on Studies to Determine the Nature and Sources of the Smog. Los Angeles, Calif.: Western Oil and Gas Asso., 1949. 64 pp.

STERN'S APPLIED DIETETICS. The Planning and Teaching of Normal and Therapeutic Diets. Revised by Helen Rosenthal, Pearl C. Baker, and Wilma A. McVey. (3rd ed.) Baltimore: Williams & Wilkins, 1949. 293 pp. Price, $5.00.

STUDIES IN POPULATION. Edited by George F. Mair. Princeton, N. J. Princeton University Press, 1949. 169 pp. Price, $2.50.

TB—THE KILLER CORNERED. Alton L. Blakeslee. New York: Public Affairs Pamphlet No. 156. 31 pp. Price, $.20.

THERAPEUTIC EXERCISES. Hans Kraus. Springfield, Ill.: Thomas, 1949. 309 pp. Price, $6.50.

VITAL STATISTICS OF THE UNITED STATES 1947. Prepared under the supervision of Halbert L. Dunn, U. S. Public Health Service, Office of Vital Staistics. Washington: Government Printing Office, 1949. Part I 228 pp. Part II 628 pp. Price, $2.25.

ASSOCIATION NEWS

RESOLUTIONS

The following Resolutions were unanimously adopted by the Association at the Seventy-seventh Annual Meeting in New York, N. Y., October 26, 1949:

1. OLEOMARGARINE

WHEREAS, scientific evidence has shown that fortified oleomargarine supplies the food factors usually expected of butter, and

WHEREAS, present federal and state taxes on oleomargarine seriously raise the retail price of this commodity, thus violating the principle that government should facilitate rather than hinder the provision of a satisfactory diet for all the people, and

WHEREAS, there is need for immediate consideration of this question by the next Congress, be it therefore

RESOLVED that the American Public Health Association condemns specific taxes on oleomargarine, reaffirms its stand taken on this problem in 1947, and respectfully petitions the Congress and the various state legislatures to repeal these taxes.

2. CHILD HEALTH SERVICES

WHEREAS, the Study of Child Health Services of the American Academy of Pediatrics has shown that many children, especially in rural areas, still lack adequate public health services, and

WHEREAS, present laws provide limited amounts of federal funds, and,

WHEREAS, the Association of State and Territorial Health Officers recently indicated the need for additional funds, be it,

RESOLVED, that the American Public Health Association recommends that all states and territories increase their respective appropriations in order to furnish to the people those services shown to be lacking by the study of the American Academy of Pediatrics.

3. WHITE HOUSE CONFERENCE

WHEREAS, the series of White House Conferences on Children and Youth have added much to the health, happiness, and well-being of children, and

WHEREAS, the theme of the Conference, development in children of the mental, emotional, and social qualities essential to happiness and responsible citizenship, is a concern of family, school, church, community, and all social and health agencies, be it

RESOLVED that the American Public Health Association calls for wide support for this Conference and recommends that all official and voluntary health agencies, national and local, take the leadership in achieving the desired goal.

4. CONFIDENTIAL BIRTH RECORDS

WHEREAS, physicians attending at births are required by the respective state laws to complete and file a certificate of birth and have an interest in seeing that none of the data contained therein are used to the detriment or embarrassment of the child and family concerned; therefore be it

RESOLVED, that the American Public Health Association commends the efforts of the American Association of Registration Executives, the Council on Vital Records and Statistics, the Children's Bureau, and the National Office of Vital Statistics of the Federal Security Agency to formulate a policy maintaining the confidential nature of birth records, and be it further

RESOLVED, that the American Public Health Association urge state legislatures and governing bodies of countries represented by the membership of this Association and their registration officials to study carefully the recommendations made and wherever possible to put them into effect by enactment into law or by administrative regulation. It especially urges that the right of inspection of birth records be restricted to the registrant, if of legal age, his parents, guardian or their legal representative, and to health and official agencies on the approval of the official custodian of vital records or on court order.

5. CONGRATULATIONS TO LORD BOYD ORR

WHEREAS, Lord Boyd Orr has been designated to receive the Nobel Peace Prize awarded in recognition of his great accomplishments in behalf of international accord, particularly with reference to the role that food supplies and adequate nutrition can play in promoting good will among men of all nations, therefore be it

RESOLVED, that the American Public Health Association forward to Lord Boyd Orr an expression of congratulations and felicitation upon his award of the Nobel Peace Prize.

6. CENTRAL AMERICAN INSTITUTE OF NUTRITION

WHEREAS, the Pan American Sanitary Bureau has recently established a Central American Institute of Nutrition which is a forward step in developing nutritional programs throughout North and South America, be it

RESOLVED, that the American Public Health Association assure the Institute of our interest in their program and offer our willingness to cooperate in any way possible.

7. CHEMICAL SUBSTANCES IN FOODS

WHEREAS, there is an increasing use of chemical substances and other new ingredients artificially introduced in foods in their production or processing, and since many of these substances introduced purposely or accidentally may either directly or indirectly affect the nutritive value of the foods which contain them, and

WHEREAS, the Food and Drug Administration of the Federal Security Agency is qualified by experience and is authorized by the Congress to protect the interests of consumers in regulating the composition and the labeling of many articles of food, therefore be it

RESOLVED, that the American Public Health Association recommend to Congress that it amend the existing Food, Drug and Cosmetic Act to prevent the incorporation into foods of chemicals or other new ingredients before they have been reviewed and approved by the Food and Drug Administration, and be it further

RESOLVED that since the Food, Drug and Cosmetic Act applies only to articles shipped in inter-state commerce, it is recommended by the American Public Health Association that the official organization of state and territorial health officers be informed of the desirability of the enactment of similar legislation by states.

8. NUTRITIONAL SURVEYS

WHEREAS, medical appraisals of nutritional status are of great importance in the field of public health, particularly with reference to such conditions as anemia, dental caries, body weight, enlarged thyroid glands and other physical means of identifying malnutrition, and

WHEREAS, it is commonly known that many surveys are being carried on independently by various health groups throughout the country, be it

RESOLVED, that the United States Public Health Service and Children's Bureau compile complete and current information on the extent of these surveys in order that they may assist local and state health departments working in coöperation with medical schools and schools of public health, for the purpose of establishing suitable criteria that can be used in the development and measurement of nutrition programs.

9. OCCUPATIONAL AND INDUSTRIAL MORTALITY RATES

WHEREAS, statistics on occupational and industrial mortality contribute vitally to programs in Public Health, particularly in the fields of industrial health and research in the chronic diseases, and

WHEREAS, the need for occupational and mortality statistics has also been expressed by representatives of groups outside the government such as industrial hygienists, voluntary health associations, and insurance companies, and

WHEREAS, the decennial census provides the only practicable population base for both state and national occupational and industrial mortality rates, and

WHEREAS, the lack of occupational and industrial mortality statistics constitutes a serious gap in our knowledge of the relationship of mortality and environment, therefore, be it

RESOLVED, that the American Public Health Association urges the Public Health Service of the Federal Security Agency to explore techniques and conduct studies of occupational and industrial mortality rates based on the 1950 census enumeration, and be it further

RESOLVED, that the state and local health agencies take advantage of the occupational data in the 1950 census material and make studies that relate this data to vital statistics available currently in the State so as to obtain essential information that can be used to further safeguard and improve the health of all the people.

10. NOMINATION OF DR. WILLIAM CRAWFORD GORGAS FOR THE HALL OF FAME

RESOLVED, that the American Public Health Association urges the election of Dr. William Crawford Gorgas to the New York University Hall of Fame in the selection to be made during June, 1950. Be it further

RESOLVED that the officers of the Association are authorized to join with the officials of

other organizations in their efforts to assure the selection of Dr. Gorgas.

11. NATIONAL SANITATION FOUNDATION

WHEREAS, there is need for an expanding sanitation program on a nation-wide basis and for its ready development, and

WHEREAS, sanitation in addition to its expanded health benefits has important social, economic and cultural values, therefore be it

RESOLVED, that the National Sanitation Foundation, in collaboration with official and voluntary organizations, both national and local, be urged to stimulate and further develop such nation-wide sanitation program.

12. APPRECIATION TO OFFICIALS AND GROUPS

RESOLVED, that the American Public Health Association expresses its grateful appreciation to the New York Committee and the agencies represented thereon for their gracious hospitality, and be it further

RESOLVED that the warm thanks of officers and members be extended to Harry S. Mustard, M.D., Chairman of the New York Committee, and his colleagues on the committee for their many courtesies, generous contributions of time and energy, and their efficiency in making provisions for this meeting and in the conduct thereof.

13. THANKS TO THE HOTELS

RESOLVED, that the American Public Health Association expresses its appreciation to the Hotel Statler, the Hotel New Yorker, and all other New York hotels that opened their doors to us for their valuable assistance in the conduct of the Seventy-seventh Annual Meeting.

14. APPRECIATION TO THE PRESS

RESOLVED, that the American Public Health Association acknowledges its indebtedness to the press, national, state, and local, for excellent service in carrying to the people of America the important events of the Seventy-seventh Annual Meeting.

15. APPRECIATION TO EXHIBITORS

RESOLVED, that the American Public Health Association expresses its grateful appreciation to those who have presented at its Seventy-seventh Annual Meeting the excellent exhibits, both scientific and technical, which are of such great interest and value to the public health profession.

16. IN MEMORIAM

RESOLVED that it is with a sense of irreparable loss that the American Public Health Association records, since its last Annual Meeting, the death of 78 Fellows and members, whose names constitute a part of this resolution.

Deceased Members and Fellows December, 1948, through October, 1949

Name	*Member*	*Fellow*	
Alice C. Bagley, R.N., El Cerrito, Calif.	1928	1934	L.M.
Charles A. Bailey, M.D., M.P.H., Jackson, Miss.	1935		
Charles J. Ball, New Orleans, La.	1936		
A. Perry Banta, M.S., Pasadena, Calif.	1946		
F. A. Barbour, Boston, Mass.	1900	1922	Charter
Goodman Bare, M.D., Anderson, S. C.	1937		
Richard C. Beckett, Dover, Dela.	1928		
Jacob R. Bitner, M.A., Columbus, Nebr.	1945		
Ernest B. Black, Kansas City, Mo.	1930		
Helen E. Bond, M.A., Savannah, Ga.	1932	1934	
William B. Borden, M.D., Dr.P.H., Wayne, Pa.	1940		
Harvey J. Burkhart, D.D.S., Rochester, N. Y.	1928		
Allston Burr, Chestnut Hill, Mass.	1920		
Rose K. Butler, R.N., Holyoke, Mass.	1934		
William J. Butler, D.V.S., Helena, Mont.	1930		
Cecil K. Calvert, Indianapolis, Ind.	1927	1946	
Joe R. Clemmons, M.D., New York, N. Y.	1944		
Gilbert Cottam, M.D., Pierre, S. D.	1943	1948	
Hugh S. Cumming, M.D., Washington, D. C.	1914	1922	Charter, Honorary

Name	*Member*	*Fellow*
Frederick B. Dart, M.D., Niantic, Conn.	1949	
Arthur T. Davis, M.D., Riverhead, N. Y.	1943	
Gesina A. F. deHoll, M.A., Albany, N. Y.	1935	
Nettie M. Dorris, M.D., Paris, Ill.	1937	
Bruce A. Douglas, M.D., Detroit, Mich.	1934	1937
Walter E. Doyle, M.D., New Orleans, La.	1941	1945
Isador J. Ehlin, M.D., New York, N. Y.	1946	
Almon L. Fales, Newton Center, Mass.	1910	1922 Charter
Walter J. Farrell, M.D., Ph.D., Johnson City, N. Y.	1937	
John T. Glenn, Jr., White Haven, Pa.	1938	
Edwin Bruce Godfrey, M.D., Minden, La.	1943	
Anna M. Gove, M.D., Greensboro, N. C.	1921	
Edgar M. Griffith, M.D., Harrisonville, Mo.	1938	
Colonel Robert D. Harden, M.C., Harathon, Fla.	1927	
John M. Hayek, M.D., M.P.H., Des Moines, Iowa	1938	1948
Carl J. Hawley, M.D., Los Angeles, Calif.	1939	
William Ford Higby, San Francisco, Calif.	1925	1930
Melvin P. Isaminger, Dr.P.H., Washington, D. C.	1927	1932
Arthur D. Jaques, M.D., Lynbrook, N. Y.	1919	
Arthur M. Johnson, M.D., Rochester, N. Y.	1932	1941
W. Scott Johnson, M.S., Jefferson City, Mo.	1925	1933
Harvey P. Jones, Toledo, Ohio	1945	
Calvin C. Kiker, C.E., Wilson Dam, Ala.	1947	
Edmond Klamke, M.D., M.P.H., Alexandria, La.	1942	1948
Thaddeus M. Koppa, M.D., M.P.H., Dallas, Tex.	1947	
Irl Brown Krause, M.D., Jefferson City, Mo.	1928	1930
Eugene E. Lamoureux, M.D., Hartford, Conn.	1939	
Harry F. Leeds, Pitman, N. J.	1941	
Abraham J. Levy, M.D., Ph.D., Dr.P.H., Dixon, Ill.	1931	1938 L.M.
William Levy, M.D., Suffield, Conn.	1941	
John D. Long, M.D., D.Sc., Guayaquil, Ecuador, S. A.	1926	1944
Willard C. Mallalieu, Boonton, N. J.	1916	
George F. Mangone, M.D., Union City, N. J.	1946	
Will J. Martin, M.D., Kokomo, Ind.	1935	
Mrs. Sari P. Mayo, M.Ed., New York, N. Y.	1948	
C. E. McCombs, M.D., New York, N. Y.	1920	1923 Charter
Ernest C. McCulloch, Ph.D., D.V.M., Pullman, Wash.	1947	
Claudio E. McNenney, M.D., Jersey City, N. J.	1940	
Daniel W. Mead, Madison, Wis.	1892	1922 Charter
Henry E. Medbery, Washington, D. C.	1943	
Albert G. Milbank, LL.B., New York, N. Y.	1943	
Patrick J. Monaghan, Newark, N. J.	1917	
Gerald Morgan, Hyde Park, N. Y.	1921	
Roy W. Morrison, Ph.D., Gainesville, Fla.	1947	
Walter B. Mount, M.D., Montclair, N. J.	1941	
Vincent C. Moyer, V.M.D., Philadelphia, Pa.	1941	
Mary E. Murphy, Chicago, Ill.	1928	
Victor C. Myers, M.D., Baltimore, Md.	1941	
A. Victor Nasatir, M.D., M.S.P.H., Los Angeles, Calif.	1938	1943
Michael J. Nestor, M.D., Providence, R. I.	1935	
Sir George Newman, London, England		Honorary Fellow 1931
M. Alexander Novey, M.D., Baltimore, Md.	1948	
Ralph R. Parker, Ph.D., Hamilton, Mont.	1931	
George H. Ramsey, M.D., Dr.P.H., Saranac Lake, N. Y.	1920	1923 Charter
Michael D. Riordan, M.D., Willimantic, Conn.	1944	
Joseph L. Schwartz, Philadelphia, Pa.	1946	
John J. Shank, B.S., Waynesboro, Pa.	1942	
John J. Sippy, M.D., Stockton, Calif.	1919	1930

Name	*Member*	*Fellow*
Benjamin J. Slater, M.D., Rochester, N. Y.	1944	
Albert E. Small, M.D., Melrose, Mass.	1938	
Harold A. Thompson, M.D., San Diego, Calif.	1934	
Frederick F. Tisdall, M.D., Toronto, Ont., Canada	1947	
William C. Treder, M.D., Schenectady, N. Y.	1938	
Donald C. Tulloch, M.D., M.P.H., Albany, N. Y.	1945	
Dr. Alamiro Valdes-Herrera, La Servena, Coquimbo, Chile, S. A.	1945	
Camillo E. Volini, M.D., Chicago, Ill.	1947	
Orpha L. White, R.N., Waukegan, Ill.	1943	
Byron W. Wood, M.D., Port Arthur, Tex.	1944	
Mildred T. Woolley, Dr.P.H., Long Beach, Calif.	1937	1948

17. THANKS FOR SPECIAL PRIVILEGES EXTENDED

Of unusual interest and value to the participants at this Seventy-seventh Annual Meeting have been the many opportunities to see at first hand many of the scientific and industrial features of the New York area.

RESOLVED, that the American Public Health Association expresses its sincere thanks to the agencies of New York City, and to those industrial organizations that made their services available for the special benefit of our members.

18. APPRECIATION TO THE TELEVISION INDUSTRY

RESOLVED, that the American Public Health Association acknowledges with thanks its appreciation for the generous contributions of the Columbia Broadcasting System, the National Broadcasting Company, and the American Broadcasting Company in making possible the demonstration of television techniques for health education. Special thanks are extended to Dr. Frank Stanton, President of CBS, for initiating the demonstration and to Mr. Sterling W. Fisher, Manager of Public Affairs and Education of the NBC, and Mr. Robert Kintner, Vice-President of ABC, for their personal interest and participation.

19. APPRECIATION TO NATIONAL PUBLICITY COUNCIL

RESOLVED, that the American Public Health Association expresses its appreciation to the National Publicity Council for its valuable contribution to the Annual Meeting, as provided by their exhibit of publicity materials.

APPLICANTS FOR MEMBERSHIP

The following individuals have applied for membership in the Association. They have requested affiliation with the sections indicated.

Health Officers Section

Fred W. Behmler, M.D., Morris, Minn., Physician and Surgeon, General Practice, Member, Minnesota State Board of Health

Bessie A. Bosworth, R.N., 45 Ocean St., Millburn, N. J., Health Officer

R. Moore Dodrill, M.D., Lewis County Health Dept., Weston, W. Va., Health Officer, West Virginia State Dept. of Health

Autino Fiore, M.D., M.P.H., 277 Mt. Auburn St., Cambridge 38, Mass., District Health Officer, Massachusetts Dept. of Public Health

Miles J. O. Gullingsrud, M.D., Court House, LaGrande, Ore., Baker-Union District Health Officer

C. R. Hostetter, 509 Third St., Palmerton, Pa., Health Officer and Secy., Board of Health

Chester A. Moyle, M.D., P. O. Box 1350, Merced, Calif., County Health Officer

George L. Saiger, M.D., 2733 Nicholson St., Apt. 101, Hyattsville, Md., Asst. County Health Officer

Brian T. Shorney, M.D., Christiansted, St. Croix, Virgin Islands, U. S., Asst. Commissioner of Health, Dept. of Health

L. L. Vitt, M.D., M.P.H., 111 South Main St., Canton, Ill., Public Health Officer, Fulton County Health Dept.

Charles W. Wendelken, M.D., 812 Gallia St., Portsmouth, Ohio, Health Commissioner

Laboratory Section

Dr. J. Caminopetros, 103 Queen Sophie Ave., Athens, Greece, Chief, Experimental Medicine Service, Hellenic Pasteur Institute

Joel R. Cohen, B.S., Box 351, Northampton, Mass., Bacteriologist, Northampton State Hospital

Gerald S. Doolin, One North LaSalle, Chicago 2, Ill., Director of Sanitation, National Confectioners Assn.

John B. Enright, Ph.D., Univ. of California, School of Veterinary Medicine, Davis, Calif., Assoc. Professor of Public Health

Mercedes de la Garza-Curcho, M.A., Guerrero Sur 220, Monterrey, N. L., Mexico, Bacteriologist, Instituto Mexicano del Seguro Social

John E. Hawley, M.S., Greenwich Gardens, Apt. E-6, Old Frederick Rd., Baltimore, Md., Bacteriologist and Chemist, Baltimore and Ohio Railroad

Gladys L. Hobby, Ph.D., 11 Bartlett St., Brooklyn 6, N. Y., Bacteriologist in charge of Biological Testing, Chas. Pfizer and Co., Inc.

James B. Hyndman, A.B., 223 U. S. Custom House, New Orleans, La., Bacteriologist, Food and Drug Administration

Ryong Sook Kee, M.D., 141 Kahoe Dong, Chongno Koo, Seoul, Korea, Laboratory Consultant, Ministry of Health

Donald L. Lange, Box 169, Washington C. H., Ohio, Sanitarian, Fayette County Health Dept.

David S. Lozano, Jr., B.S., 1967 66th St., Brooklyn 4, N. Y., Chemist, Block Drug Company

Aeolian McRee Reese, M.S., 19 Houston Mill Road, N.E., Atlanta, Ga., Bacteriologist, State Health Dept.

Ruth K. Rinehart, A.B., 131 Ramona Ave., Monterey Park, Calif., Bacteriologist, Los Angeles County Health Dept.

Harriet S. Shatin, Ph.D., 525 E. 3rd St., Boston, Mass., Formerly Laboratory Asst., Public Health Research Institute of New York

John M. Stavorski, 54 E. Somerset St., Raritan, N. J., Research Asst., Ortho Research Foundation

Statistics Section

Deane L. Huxtable, 1022 S. W. 11 Ave., Portland 5, Ore., Chief, Vital Statistics Section and State Registrar, State Board of Health

Engineering Section

James E. Craven, Jr., A.B., San Patricio County Health Unit, Sinton, Tex., Chief Sanitarian

Walter L. Dunn, B.S., F.S.A., P.H.S., Div. of Water Pollution Control, Washington 25, D. C., Junior Asst. Sanitary Engineer

James S. Gillen, B.C.E., 5 Thomas Ave., Baldwin, L. I., N. Y., Junior Public Health Engineer, Nassau County Dept. of Health

Irving Grossman, B.C.E., 2424 N. Charles St., Baltimore 18, Md., Student and Research Asst., Dept. of Sanitary Engineering, The Johns Hopkins Univ.

William A. Hansen, The Hobart Mfg. Co., Troy, Ohio, Sales Manager, Dealer Division

James D. Helm, P. O. Box 1204, Port Arthur, Tex., Sanitary Inspector, F.S.A., P.H.S.

J. P. MacLaren, PH&W, GHQ, SCAP, APO 500, P. M. San Francisco, Calif., Sanitary Engineer, Public Health and Welfare, Japan

Frank Rozich, B.S., 720 Boston B'dg., Denver, Colo., Public Health Engineer, Colorado Dept. of Public Health

Henry W. Scoralick, B.C.E., 35 Market St., Poughkeepsie, N. Y., District Sanitary Engineer, State Dept. of Health

Industrial Hygiene Section

W. W. Kimmell, B.S., 2300 North Adams St., Peoria, Ill., Industrial Relations Manager, R. G. LeTourneau, Inc.

Food and Nutrition Section

Grace K. Finnegan, B.S., 147 Worthington St., Boston 15, Mass., Graduate Student, Harvard School of Public Health

Carlton Fredericks, M.A., 59 W. 44 St., New York, N. Y., Director, Institute of Nutrition Research

Thomas G. Murnane, D.V.M., Fourth Army Area Medical Laboratory, Fort Sam Houston, Tex., Veterinary Corps Reserve

Penelope Peckos, B.S., Forsyth Dental Infirmary, Boston, Mass., Asst. Nutritionist

Maternal and Child Health Section

Joseph A. Gaetane, M.D., 35-05 161 St., Flushing, N. Y., Private Practice, Obstetrics and Gynecology

I. Newton Kugelmass, M.D., Ph.D., Sc.D., 1060 Park Ave., New York 28, N. Y., Director, Heckscher Institute for Child Health

Sidney Sommers, M.D., 1855 Grand Concourse, New York 53, N. Y., Obstetrician Maternity Hygiene Clinic, Dept. of Health, City of New York

Hyman B. Warshall, M.D., 56 Rugby Road, Brooklyn 26, N. Y., Physician, Pediatrician, Flatbush Medical Group

Public Health Education Section

Milton Blumenthal, M.S., 5 Metropolitan Oval, New York 62, N. Y., Health Education Asst., New York City Dept. of Health

Anne Bronkhorst, M.S., 155 E. 44th St., New York 17, N. Y., Health and Safety Adviser, Girl Scouts of the U.S.A.

Ida L. Brugnetti, M.P.H., 48 Tremont St., Mattapan 26, Mass., Health Educator, F.S.A., P.H.S.

Sheila M. Dwyer, M.A., Niagara Sanatorium, Lockport, N. Y., Educational Director

Ruth E. Franz, R.N., M.A., 24 W. 89 St., New York 24, N. Y., Industrial Health Consultant, Liberty Mutual Insurance Co.

Wallace C. Fulton, B.A., 606 7th St., S.E., Minneapolis 14, Minn., Community Health Consultant, Minnesota Dept. of Health

Mary L. Gajewski, R.N., B.S., 172 Carew St., Apt. 6, Springfield, Mass., Instructress, State Dept. of Public Health, Westfield State Sanatorium

Darius Johnson, Jr., M.S.P.H., 522 Fisher St., Fayetteville, N. C., Formerly, Science Instructor, City Schools

Lillie R. Lynch, M.P.H., 2700 Magnolia Ave., Portsmouth, Va., Formerly, Teacher, General Science and Health

Sister Mary Peter Meyer, Mount St. Clare College and Academy, Clinton, Ia., Physical Education Director

Fay Sarles, B.A., 17 Park Ave., New York 16, N. Y., Editorial Asst., Metropolitan Life Insurance Co.

Public Health Nursing Section

A. Isobel Black, 1246 Bishop St., Montreal, Quebec, Canada, District Supt., Greater Montreal Branch, Victorian Order of Nurses

Agnes H. DesMarais, B.S., Hokkaido Civil Aff. Dist., APO 7, P. M., San Francisco, Calif., Regional District Public Health Nurse

Regina M. Dix, R.N., 1808 Upshur St., N. E., Washington 18, D. C., Educational Supervisor, Prince Georges County Health Dept.

Betty J. Lewis, R.N., 4363 Lockwood Ave., Los Angeles 27, Calif., Clinic Nurse, City Dept. of Public Health

Beatrice Lott, M.A., 2831 South Eway, Dallas 15, Tex., Director, Visiting Nurse Assn.

Sarah Malik, B.S., 1733 South Bedford St., Los Angeles 35, Calif., Public Health Nurse, City Health Dept.

Evangeline Meisdalen, R.N., Malta, Mont., Formerly, Sweden Hospital, General Duty

Sylvia R. Peabody, R. N., Northern Michigan Children's Clinic, Marquette, Mich., Pediatric Nursing Consultant

Pearl Rouse, M.A., R.N., Maine General Hospital, Portland, Me., Public Health Nurse, Co-ordinator, Student Health Supervisor

Lillian S. Smallens, B. S., 67-33 169 St., Flushing, N. Y., Student, New York Univ.

Edith M. Waldemar, R.N., B.S., 185 Division St., New Rochelle, N. Y., Acting Director, Visiting Nurse Assn. of New Rochelle

Epidemiology Section

George L. Humphrey, D.V.M., 325 S. 16th St., Apt. 1-D, Richmond, Calif., Veterinarian, F.S.A., P.H.S., State Dept. of Public Health

Comdr. William K. Lawlor, USN, Marine Barracks, Camp LeJeune, N. C., Officer in Charge, Navy Epidemic Disease Control Unit

Manfred Weichsel, M.D., 43-24 43rd St., Long Island City, N. Y., Medical Inspector, Dept. of Child Hygiene, New York City Dept. of Health

School Health Section

Lucile E. Franzen, 4046 South 24 Ave., Minneapolis 6, Minn., School Nurse, Independent School District

Joseph Skuhra, M.A., 523 Howe St., Green Bay, Wisc., Director of Health and Physical Education, Green Bay Public Schools

Gustave B. Timmel, M.S., State Teachers College, Cortland, N. Y., Instructor of Health Education

Dental Health Section

Warren R. Sisson, M.D., 319 Longwood Ave., Boston 15, Mass., Physician

A. E. Venables, M.D., 156 E. 6 St., St. Paul, Minn., Medical Director, Minnesota Mutual Life Insurance Co.

Medical Care Section

James S. Farrant, M.A., 107 Thorndale Terrace, Rochester, N. Y., Administrative Asst., The Genesee Hospital

Rosemary Hayes, M.S., 247 D. Beach Walk, Honolulu, T. H., Medical Social Consultant, Vocational Rehabilitation Service

Vlad F. Ratay, B.S., Tempo. R. Bldg., Room 2067, 4th and Jefferson Drive, S.E., Washington 25, D.C., Regional Administrative Methods Consultant, Children's Bureau, F.S.A.

James M. Reinhardt, Ph.D., Univ. of Nebraska, Dept. of Sociology, Lincoln, Neb., Professor of Sociology

Allen B. Thompson, A.B., 80 Lexington Ave., New York 16, N. Y., Vice President and Actuary, Associated Hospital Service of New York

Frances C. Zimmer, 1017 East Boston Ave., Monmouth, Ill., Executive Asst., Illinois State Medical Society

Unaffiliated

Helen Brazell, M.S.W., 412 Union, St. Louis 8, Mo., Instructor, Dept. of Preventive Medicine, Washington Univ.

H. Grady Callison, Jr., M.S., 18 West 8 St., Jacksonville 8, Fla., Industrial Hygiene Engineer, State Board of Health

Jonathan B. Keener, 807 Clay St., Fairmont,

W. Va., Condenser Operator, Monongahela Power Co.

J. R. Salazar-Dominguez, M.D., Av. Bermudez No. 162 Cumana, Edo Sucre, Venezuela, S. A., Medico Higienista, Ministerio de Sanidad y Asistencia Social

Hart deWit Wood, B.S., Dept. of Health, Honolulu, T. H., Business Manager

Preston R. Woodham, M.H.A., Baylor Hospital, 3301 Junius, Dallas, Tex., Administrative Resident

INTER-AGENCY COÖPERATION IN SCHOOL HEALTH

At the October meeting of the American Public Health Association, the School Health Section Council voted to recommend that a committee be set up between the Health Education Division of the American Association for Health, Physical Education and Recreation, the American School Health Association, and the School Health Section of the American Public Health Association for the purpose of determining a more effective means of coöperation on projects of mutual interest.

Charles C. Wilson, M.D., Professor of Education and Public Health, Yale University School of Medicine, New Haven, is Secretary of the School Health Section, A.P.H.A.

DR. SUNDWALL CITED BY EXECUTIVE BOARD

The extraordinary services of Dr. John Sundwall, recently retired from the staff of the University of Michigan School of Public Health, Ann Arbor, for his untiring efforts for many years in promoting membership in the American Public Health Association were cited in a recent action of the Executive Board of the Association. A vote of respect and of appreciation was unanimously adopted by the Board with the direction that it be transmitted to Dr. Sundwall on behalf of the entire Association.

MICHIGAN PUBLIC HEALTH ASSOCIATION

For its 29th Annual Meeting held in Detroit November 9–11, 1949, the Michigan Public Health Association reports well attended sessions and an attendance of almost 700. The next meeting will be held in Grand Rapids, November 29–December 1, 1950. New officers are:

President—George C. Stucky, M.D., Charlotte
President-Elect—Marjorie Delavan, Lansing
Vice-President—W. L. Mallmann, Ph.D., East Lansing
Secretary-Treasurer—LaRue Miller, Lansing

A.P.H.A. membership application blank on page XXVII

EMPLOYMENT SERVICE

The following pages present information for those seeking qualified public health personnel and for those seeking positions in public health.

This is a service of the Association conducted without expense to the employer or employee.

POSITIONS AVAILABLE

Supervisors and Public Health Nurses. County population 248,000; suburban, industrialized and rural areas; county seat 8 miles from Baltimore. Generalized service including modern school health program; 50 field nurses. One month's vacation; 5 day, 35½ hour week; sick leave; retirement plan. For use of personal car, allowance of 7¢ per mile. **Supervisor:** degree and experience required; beginning salary $3,600–$4,000, depending on qualifications; additional preparation in a special field preferred. **Public Health Nurses,** beginning salary $2,300 (for trainee) to $3,000 depending on experience and education. Dr. William H. F. Warthen, Health Officer, Baltimore County Health Dept., Towson 4, Md.

Public Health and Hospital Consultants —5. Must have had 5 years' experience in full-time public health administration and a year of graduate training in public health. Additional experience in hospital administration desired. Duties include public health and hospital consultant services to Indian installations including hospital and field health programs for Indians in areas comprising two or more states. Headquarter locations will be in Portland, Ore.; Billings, Mont.; Aberdeen, S. D.; Albuquerque, N. M.; Phoenix, Ariz. Civil Service status with beginning salary of $8,800 with increase after 18 months of successful service. Automobile furnished for official travel; $9 per diem allowed; 30 days annual leave granted. Director of Health, Bureau of Indian Affairs, Dept. of the Interior, Washington 25, D. C.

Dental Educator for city public health department, preferably with elementary school teaching and dental hygienist experience. Present salary range $220 to $265 per month; automatic salary increases; semi-annual cost-of-living salary adjustments; $25 per month mileage allowances; state-wide retirement program. Personnel Division, City Hall, Madison 3, Wis.

Director, Division of Chronic Diseases, in a State Department of Health. Eligibility for medical licensure in state, and responsible public health experience required. Graduate study in public health desirable. Salary dependent on qualifications. **Box A-79,** Employment Service, A.P.H.A.

Supervising Milk and Food Sanitarian —city of 160,000, Northeastern U. S. Sanitation staff of 13. B.S. plus 2 years' experience including milk and food. Veterinarians eligible. Salary range $4,300–$5,300. **Box A-80,** Employment Service, A.P.H.A.

Staff School Nurse for small, well organized school health department, Pacific Coast. Beginning salary $2,850 to $3,200 depending on training; 35 hour week; work 9 calendar months, two weeks vacation Christmas, one week Easter. Annual increment for 10 years up to $5,000; tenure after 3 years. B.A. and P.H.N. degrees, own car. Send photograph, age, degrees, training, and experience, marital status, number of children. **Box A-77,** Employment Service, A.P.H.A.

Chief, Bureau of Maternal and Child Health. M.D. with some experience in public health, salary range $6,200 to $6,900; or M.D. with M.P.H. and moderate experience in MCH work. Qualified persons can start higher than base salary.

Chief of Preventive Services—Salary range $6,200 to $6,900 plus a small teaching contract. M.D. with some experience in public health or M.D. with M.P.H.; starting salary $6,600. Ability to do some communicable disease diagnostic work and have some administrative experience. For both above positions write to: Paul W. Bowden, M.D., Assistant Director, Dept. of Health, Richmond, Va.

Nurses—Generalized Advisory. Salary $3,336–$4,200; public health nurses, salary $2,652–$3,336; graduate nurse assistants in public health nursing, salary $2,340–$2,882; $20 monthly car allowance plus up-keep; 5 day week, vacation, sick leave and retirement benefits. Generalized rural program. Write: Hazel Higbee, Director Bureau Public Health Nursing, Virginia State Dept. of Health, Richmond 19, Va.

District Nutrition Consultant—Master's degree with major in food and nutrition and two years of experience, one year in supervisory and consulting capacity. Present salary range $264 to $315, probably raised to a higher range within 6 months.

Hearing Consultant—Master's degree in special education from an accredited graduate school of education or 5 years'

experience in teaching deaf or hard of hearing children, including one year's experience in audiometric testing. Salary range $264 to $315. Will probably be raised within the next 6 months. For both above positions write to: Division of Child Hygiene, Ohio Department of Health, Columbus 15, Ohio.

Full-time Health Commissioner for Sandusky City and Erie County Health District between Cleveland and Toledo. Well staffed force, consisting of 6 nurses, 1 supervising nurse, 2 sanitarians, 1 food inspector, 4 clerks, veterinarian and 1 lay meat inspector. Sandusky City and Erie County Health Dept., P. O. Box 479, Sandusky, Ohio.

County Health Officer for central Illinois county of 37,000. Plans under way to combine with another county to make health jurisdiction of 50,000. Salary range $6,600–$9,800. W. H. Newcomb, M.D., President, Morgan County Board of Health, Professional Bldg., Jacksonville, Ill.

Principal Bacteriologist—qualifications: college degree in biology or chemistry, 1 year postgraduate work in bacteriology or microbiology and 4 years' experience in public health laboratories—two of which should have been in supervisory capacity. Permanent appointment, subject to merit system examination. Salary range $3,840–$4,416 in 4 annual steps. Wm. A. Dorsey, Chief, Public Health Laboratories, Department of Public Health, Richmond, Va.

Public Health Nursing District Supervisor—1 year graduate study and at least 3 years experience in public health nursing, to cover several counties southeastern North Dakota. Beginning salary $295 per month plus travel and maintenance in field. Merit System. Director, Public Health Nursing, North Dakota State Dept. of Health, Bismarck, N. D.

Opportunities in Connecticut

The following opportunities for public health physicians are available in the Connecticut State Department of Health:

Epidemiologist—$6,900–$8,340
Clinical Psychiatrist, experienced in child psychiatry—$7,020–$8,460
Internist for heart disease program—$6,900–$8,340
Chief, Division of Hospitals—$6,900–$9,060
Deputy Commissioner—Preventive Medicine—$8,220–$10,020

Positions are under State Merit System. Liberal retirement provisions, group insurance and other benefits. For information write to: W. T. Youngberg, Supervisor of Personnel, Connecticut State Dept. of Health, Station A, Drawer K, Hartford, Conn.

Opportunities in Michigan

Michigan has openings for medical personnel in local health departments.

Health Officer for two county department, southwestern Michigan, population 89,000, staff of 13 public health nurses, 3 sanitarians, field training area. Applicant must have had experience and training. Salary $9,000.

Health Officer for two county department, Upper Peninsula, population 28,000. Possibility of expansion to include third county of 27,000. Salary $8,000.

Health Officer for two county department, Upper Peninsula, population 20,000. Excellent community support. Salary $7,000.

Two openings for physicians in city-county department in lower Michigan, population 155,000. Excellent living conditions with large state college in area. Director of Communicable Disease and Venereal Disease Control, $8,100–$9,000. Director of Maternal and Child Health, $7,200–$8,100.

Assistant health officer needed in city health department serving population of 97,000. Department has good staff and expanding program. Salary $7,200–$8,000.

Assistant health officer vacancy in department serving rural area surrounding a large city. Population of county 57,000. Beginning salary at least $7,500.

For further information write: Section of Local Health Services, Michigan Department of Health, Lansing 4, Mich.

Resident Internships in Family and Community Development

The Milwaukee City Health Department announces internships in family and community development open to university, seminary and college students of graduate or upper division standing, "whose vocational interest involves some aspect of human nurture." Education through guided participation in the ongoing life and developments of the psychological, social, emotional, and physical aspects of community life are offered. One academic year of internship is recommended but students will be accepted for a minimum of one semester. Academic credit is arranged in coöperation with the academic institutions. There is no tuition fee. The internship includes room, board, costs of registration, the keeping of records, use of a working library and instructional materials. Efforts are being made to arrange for a modest cash scholarship. Address inquiries to: Dr. Regina H. Westcott, Consultant in Family and Community Development, Matthew Keenan Health Center, 3200 North 36th St., Milwaukee 10, Wis.

Opportunities for TB Physicians in San Diego
Examination Announcement
San Diego, Calif.

The Department of Civil Service and Personnel announces an examination for Physician I and II (TB Option). Physician I—except for persons who are already permanently employed by the county, applicants must not have passed their 55th birthday at the time of appointment; must be citizen of the

United States; M.D. from an accredited Medical School, including completion of one year of general rotating internship in an approved hospital; at least one year of experience in a TB sanatorium; license to practise in California. Salary $6,384. Physician II—same requirements as above, with 2 years' full-time experience in the diagnosis and treatment of tuberculous patients. Salary $7,392.

Application forms are obtainable at Room 402, Civic Center, San Diego 1, Calif.

Announcement of Regular Corps Examination for Dental Officers
United States Public Health Service

Examinations for Dental Officers in the Regular Commissioned Corps of the U. S. Public Health Service, will be held April 17–19, in various cities throughout the country. Completed applications must be in the Washington office by March 20. Appointments are permanent and provide opportunities for career service in clinical, research, and public health dentistry. Benefits include periodic pay raises and promotions; liberal retirement provision; medical care; annual and sick leave.

Appointments will be made in the grades of Assistant and Senior Assistant Dental Surgeon. Entrance pay is $5,686 for Assistant and $6,546 for Senior Assistant (with dependents), including the $1,200 additional pay received by Dental Officers and rental and subsistence allowance. Applicants must be citizens and graduates of an approved school of dentistry.

For application forms and additional information write to: Surgeon General, U. S. Public Health Service, Federal Security Agency, Washington 25, D. C. Attention: Division of Commissioned Officers.

POSITIONS WANTED

Bacteriologist—B.A., M.S. Experience includes college teaching, clinical laboratory work and 7 years as director of Water Department Laboratory. Desires responsible position in supervisory, administrative or academic capacity. **Box LD-7,** Employment Service, A.P.H.A.

Health or Hospital Administrator, male, age 35, non-medical. Free to travel in U. S. for assignment with state or local agency. Trained at Boston University College of Business Administration. 6 years' experience hospital and health supervision. Earnings average $5,500 yearly. Write: **Box C-14,** Employment Service, A.P.H.A.

Public Health Educator, male, B.A. and postgraduate training in public health in a recognized school of public health. Desires position as health educator or in the field of sanitation. Write: **Box HE-19,** Employment Service, A.P.H.A.

Health Educator—female, M.P.H. Work experience in the following fields: 5 years as teacher on secondary level in large city; 2 years as medical social worker; 1½ years in VD Control; 1 year as health educator on federal level with TB control. Interested in public or private agency; free to travel. Write: **Box HE-21,** Employment Service, A.P.H.A.

Bacteriologist, male 22, B.Sc. and M.Sc., research fellow, Ohio State University, charge of laboratory doing water pollution survey, 5 months. Interested in food bacteriology or position concerned with public health. Available March 1. **Box LD-8,** Employment Service, A.P.H.A.

Advertisement

All communications should be sent to Burneice Larson, Medical Bureau, Palmolive Building, Chicago 11, Ill.

Opportunities Available

PUBLIC HEALTH PHYSICIANS: (a) Health commissioner; university town of 125,000, Middle West; $10,000–$12,000. (b) Administrative chief of all public health activities; county population 350,000; headquarters in university and resort city of 195,000. (c) Director blood program recently inaugurated; duties administration, public relations; training in technical aspects of blood transfusion and blood typing desirable, not required; university medical center; opportunity faculty appointment. (d) County health Director; county of 300,000; challenging opportunity; $8,500–$10,000; California. (e) Director student health department, enrollment 8,000; preferably one qualified to develop program. (f) To develop public school health program; enrollment of 12,000; winter resort city, Southwest. (g) Director division of geriatrics and adult hygiene; metropolitan health department, Middle West. (h) Chief of preventive services; university medical center, South; opportunity faculty appointment. (i) Public health internist, child hygiene physician and epidemiologist; state department of health; expansion program. **PH2-1** Burneice Larson, Medical Bureau, Palmolive Building, Chicago.

PUBLIC HEALTH DENTISTS: (a) To direct state program of dental health education; $6,600–$7,800. (b) Senior dentist to direct city health school program; senior position, North Carolina. (c) To join department of dentistry, health department, public schools; Indiana. **PH2-2** Burneice Larson, Medical Bureau, Palmolive Building, Chicago.

WANTED—(a) Health educator consultant and, also, two sanitary engineers; training center recently established; town of 35,000, Middle West. (b) Public health engineer; preferably B.S. from college of engineering with academic training in sanitary engineering; minimum 3 years' experience, preferably in tropical or backward countries, Arabia; minimum $6,000, maintenance, other perquisites. (c) Supervisor of health education; duties: directing program among lay and professional groups, state department of health. (g) Sanitary engineer thoroughly experienced in fields of malaria and insect control; key position; South America; $7,000. **PH2-3** Burneice Larson, Medical Bureau, Palmolive Building, Chicago.

WANTED—PUBLIC HEALTH NURSES: (a) To serve as nursing consultant and health educator; state department of diabetes control; winter resort city, South. (b) To direct student health department, liberal arts college; Pacific Coast. (c) School nurse, public schools; beautiful suburb midwestern metropolis; public school experience desirable. (d) Supervisor and staff nurses; city-county health department; college town, California. (e) To serve as consultant on state-wide basis to hospital nursing staffs and public health nurses for maternity and new-born infant care; headquarters, university medical center. (f) Staff nurses, city health department; will consider nurses without public health training as trainees at salary, $190 monthly; after first year, university training in public health nursing provided. (g) Director of public health nursing, supervisor of public health nursing and, also, assistant supervisor; municipal health department, West Indies. (h) Director of public health nursing; municipal health department; staff of 12 field nurses, one supervisor; town of 80,000, short distance from Chicago. **PH2-4** Burneice Larson, Medical Bureau, Palmolive Building, Chicago.

Situations Wanted

Public health medical officer seeks administrative appointment; M.P.H. Johns Hopkins; experience includes 6 years as health commissioner, state department of health and 5 years, professor of public health and head of department, university medical school; for further information, please write Burneice Larson, Medical Bureau, Palmolive Building, Chicago.

Health educator; M.S., D.P.H.; 1 year, research fellow and 2 years, teaching fellow, university school of public health; 5 years, associate professor of hygiene and public health; several years, director, health education, state department of health; for further information please write Burneice Larson, Medical Bureau, Palmolive Building, Chicago.

Public health dentist; 8 years, private practice of general dentistry, simultaneously serving as director, dental clinic, public schools; 2 years, public health dentistry for children, state department of health; for further information, please write Burneice Larson, Medical Bureau, Palmolive Building, Chicago.

Public health nursing administrator; B.S. (Nursing Education); M.P.H.; 3 years' rural nursing; 4 years, supervisor, city-county health unit; past several years on faculty, university school of public health nursing; for further information, please write Burneice Larson, Medical Bureau, Palmolive Building, Chicago.

Sanitary engineer; B.S. (Civil Engineering); year's graduate training, Harvard Graduate School of engineering; 12 years' experience; for further information, please write Burneice Larson, Medical Bureau, Palmolive Building, Chicago.

NEWS FROM THE FIELD

DR. MAHONEY BECOMES COMMISSIONER IN NEW YORK CITY

John Friend Mahoney, M.D., who was recently retired as Medical Director, U. S. Public Health Service in charge of the Venereal Disease Research Laboratory, Staten Island, N. Y., was appointed Commissioner of Health of the New York City Department of Health effective January 1, 1950, succeeding Harry S. Mustard, M.D., who has become Executive Director of the New York State Charities Aid Association, New York City.

Dr. Mahoney, who is a native of Wisconsin, is a graduate in medicine of Marquette University School of Medicine, and has been a commissioned officer of the Public Health Service since 1917. His work with the Venereal Disease Research Laboratory extends over twenty years, during which time he and his associates developed the first successful use of penicillin in the treatment of syphilis. Dr. Mahoney received the Lasker Award of the American Public Health Association for this achievement in 1946.

Dr. Mahoney, who is a member of the A.P.H.A. Committee on Research and Standards, is Chairman of the Committee for Standardization of Serologic Tests for Syphilis under the Laboratory Section. He is also Chairman of the Committee of Experts on the Venereal Diseases, World Health Organization, and Chairman of the National Advisory Serology Council. Dr. Mahoney was elected to Fellowship in the Laboratory Section, A.P.H.A. in October, 1941.

EPILEPSY GROUPS UNITE

The National Epilepsy League with headquarters at 130 N. Wells St., Chicago, was recently organized by the consolidation of two existing organizations, the American Epilepsy League and the National Association to Control Epilepsy. The board of the new organization includes former board members of both agencies. Ben H. Gray, who was the national director of the American Epilepsy League, is the executive officer.

The stated purposes of the new organization are to:

Encourage research in the causes and prevention of epilepsy.

Prepare information on available medical resources, school facilities, and job opportunities.

Dissolve the stigma of epilepsy by focusing attention on the opportunities for the control of epileptic seizures.

NATIONAL NEGRO HEALTH WEEK

The dates, April 2–9, 1950, have been announced for the 36th annual Negro National Health Week. The special objective this year will be evaluation of accomplishments and the direction of next steps. National Negro Health Week was first declared in 1915 by Booker T. Washington and dedicated as a week of clean-up of homes and premises and check-up of personal and family health. From there it has gone on to a special period of emphasis on a year-round health program. A preliminary folder about the 1950 Week has been issued by the Public Health Service and other material is in preparation — posters, bulletins, suggestions for broadcasts, the health week sermon, and others. Further details from National Negro Health Week Committee, Public Health Service, Washington 25, D. C

NEWS OF MICHIGAN LABORATORIES

The Michigan State Health Department Laboratories is undertaking a study to develop new methods and

evaluate old methods of blood fractionation. Attempts will be made to recover and extend the usefulness of the albumen and globulin from outdated plasma and to find other ways of extending to more persons the benefits of each unit of collected blood. Results will be made available to other blood fractionation centers. This work is being done under a series of grants from the American Red Cross to extend over several years.

The laboratories will also do highly specialized research in the poliomyelitis field for the National Foundation for Infantile Paralysis which has made a grant for this purpose.

PUTNAM FELLOWSHIP AVAILABLE

For the sixth time, the Helen Putnam fellowship for advanced research in genetics of mental health, open to women scholars who have their doctorate, is offered by Radcliffe College for the academic year 1950–1951. The award carries a stipend of $2,800 a year with the possibility of renewal. Applicants are asked to submit a plan of research; preference will be given to those whose research is already in progress. Applications should be sent to the Secretary of the Graduate School, Radcliffe College, Cambridge, Mass., not later than April 1, 1950.

THOMAS PARRAN SCHOLARSHIP

Former associates in the Service of Thomas Parran, M. D., who was Surgeon General of the U. S. Public Health Service for 12 years ending in 1948, have created a Thomas Parran Scholarship at the new University of Pittsburgh School of Public Health, of which Dr. Parran is Dean. Provision is made for addition to the original grant of $5,000 by present and former personnel of the Service.

Charles L. Williams, Sr., Assistant Surgeon General, in presenting the Scholarship to the University said, "The people of the U. S. Public Health Service wished to present Dr. Parran with some tangible evidence of the love and esteem they hold for him. Believing that a material gift is perishable and soon forgotten, they chose to honor him with this lasting gift."

WHO MEMBERSHIP AS 1949 ENDS

Although the WHO constitution includes no provision for such action, Bulgaria in November, 1949, became the fourth country to announce its withdrawal from the World Health Organization, Soviet Russia, Byelorussia, and the Ukraine having announced their withdrawal earlier in the year. At the end of the year a total of 67 countries had ratified the WHO constitution.

Coincidental with Bulgaria's withdrawal, the government of Yugoslavia appropriated and deposited with the Federal Reserve Bank in New York $10,000 to the 1950 WHO supplemental budget of $10,000,000 requested by the June, 1949, World Health Assembly in Rome. Ceylon, the Dominican Republic, India, and the United States are among other countries that have expressed their willingness to contribute to this fund over and above the regular budget of $7,500,000.

MOSQUITO CONTROL EXPEDITION

The American Mosquito and Virginia Mosquito Control Associations are meeting jointly February 23 and 24 at the Cavalier Hotel, Virginia Beach, Va. Two important discussion groups will be featured: (1) DDT resistance in mosquitoes and new insecticides for use in 1950, led by Dr. F. C. Bishopp, U. S. Bureau of Entomology and Plant Quarantine, (2) the use of radioactive isotopes in mosquito control, led by Dr. Dale Jenkins of the Army Chemical Center, Maryland.

At the close of the meeting on February 25 a motorcade will start from Virginia Beach, proceed to Williamsburg, Va., Maryland, Delaware, and

terminate in Atlantic City on March 1, where the New Jersey Mosquito Control Association will meet from March 1 to March 3. The motorcade will inspect mosquito control work and visit points of historical interest enroute.

Further details from R. E. Dorer, Room 204, Essex Building, Norfolk, Va.

NEW FELLOWSHIP FOR RESEARCH IN TUBERCULOSIS

The New York Tuberculosis and Health Association announces that the James Alexander Miller Fellowship will be available for one year beginning July 1, 1950. The fellowship carrying a stipend of $5,000 is designed to support a qualified medical investigator who will devote full time to a research project with a definite bearing on tuberculosis. Assurance must be provided that the applicant will be acceptable in the laboratory or clinic of his choice and that he will be provided with the facilities necessary for the pursuit of the work. It is preferred that such laboratory or clinic be located in New York City.

Application forms will be supplied on request to the New York Tuberculosis and Health Association, 386 Fourth Avenue, New York 16, N. Y., and must be submitted in duplicate not later than March 1, 1950. Announcement of the award will be made in April, 1950.

AMERICAN STATISTICAL ASSOCIATION

At the Annual Meeting of the American Statistical Association held in New York City at the end of December, Samuel S. Wilks, Princeton University, was elected President; Lowell J. Reed, Ph.D., Johns Hopkins University, President-Elect and Philip M. Hauser, the Acting Director of the Bureau of the Census, Washington, Vice-President.

MASS TEST FOR CHRONIC DISEASES

The Richmond, Virginia, Health Department, the U. S. Public Health Service, and local agencies began a mass testing program for seven chronic conditions on January 1. Residents are tested free for diabetes, heart disease, high blood pressure, pulmonary tuberculosis, anemia, obesity, and syphilis, after which the information is turned over to the family physician. The program is financed by a grant from the Public Health Service which is matched in services and equipment from the city health department.

INTER-AMERICAN SANITARY ENGINEERS

The Inter-American Association of Sanitary Engineers will hold its second congress in Mexico City, March 16 to 26, 1950, sponsored by various Mexican governmental agencies, the Institute of Inter-American Affairs, and the Pan American Sanitary Bureau. Interesting inspection trips are also being arranged. Technical and professional persons working in sanitation or public health engineering are invited. For further information: Ralph J. Van Derwerker, Secretary, 2001 Connecticut Avenue, N.W., Washington 8, D. C., or Alberto Ortiz Irigoyen, Calle de Campeche 244, Mexico, D. F., Mexico.

STUDIES ON DISHWASHING

The National Sanitation Foundation's *Research Bulletin No. 2* summarizes studies carried on under the Foundation covering investigations of single tank conveyor type machines, high temperature dishwashing, detergent feeders, manual dishwashing and sanitizing of food utensils, and pre-washing. Copies free from the Foundation, School of Public Health, University of Michigan, Ann Arbor.

DEMAND FOR WATER FETTERS ECONOMY

This is the headline of a front page article appearing recently in the *New York Times*. "The United States faces heavy economic losses in the foreseeable future because of unplanned, excessive

increases in the use of its most precious mineral resources — water." The article goes on to note that, theoretically, there is sufficient water for the U. S. since only 30 per cent of the total rainfall is utilized — even though the present use averages 700 gallons per person per year. The danger cited is the uncoordinated use and development of water resources.

Attention is called to the lack of any central fact-gathering agency. Progress in solving this is seen in the recent formation of the Conservation Foundation, 130 East 40th Street, New York. A comprehensive study being conducted by the Foundation will assemble data on water shortage areas and will also analyze and correlate this information with known methods for combating shortages.

CHILDREN'S BUREAU DEVELOPS TEAM OF TROUBLE SHOOTERS

The U. S. Children's Bureau, as an innovation, has engaged five experts to serve as "trouble shooter consultants" in specialized fields of maternal and child health. Their main responsibilities will be to advise the bureau staff and state health agencies on programs of obstetric care, on hearing and speech problems of children, cerebral palsy, child psychiatry, and on the care of prematurely-born infants, with the purpose of improving the quality of care provided in states' maternal and child health and crippled children's programs. These include:

Grete L. Bibring, M. D., Chief of Psychiatric Services, Beth Israel Hospital, Boston

Harry H. Gordon, M. D., Professor of Pediatrics, University of Colorado

William G. Hardy, M. D., Director of the Hearing and Speech Center, Johns Hopkins School of Medicine, Baltimore

Meyer A. Perlstein, M. D., Professor of Pediatrics, Cook County Postgraduate Medical School, Chicago

John Whitridge, Jr., M. D., Assistant Professor of Obstetrics, Johns Hopkins School of Medicine

INDUSTRIAL HYGIENE COMMITTEE

Leonard A. Scheele, Surgeon General, U. S. Public Health Service, recently announced the formation of an Advisory Committee on Industrial Hygiene to bring together the views of management, labor, and industrial hygienists. Members are:

Andrew Fletcher, President, Joseph Lead Company, New York

Vincent P. Ahearn, National Sand and Gravel Association, Washington, D. C.

Nelson H. Cruikshank, Director, Health Insurance Activities, American Federation of Labor

Harry Read, Congress of Industrial Organizations

Theodore F. Hatch, School of Public Health, University of Pittsburgh

Dr. R. H. Hutcheson, Tennessee Commissioner of Public Health

Dr. Harold A. Vonachon, Medical Director, Caterpillar Tractor Company, Peoria, Ill.

Dr. Leo Price, Director, Union Health Center, International Ladies Garment Workers Union, New York

Mrs. Margaret Lucal, Medical Department, Ohio Rubber Company, Willoughby, and

Paul Scharrenberg, Director, California Department of Industrial Relations, San Francisco

A WEST VIRGINIA FIRST

What is reported to be "the first mobile unit in operation in the United States containing facilities for both collection of samples and laboratory analyses" of atmospheric contamination is now in possession of the West Virginia Department of Health. It is a panel truck designed by the Bureau of Industrial Hygiene, equipped with instruments and collecting devices for entrapping various gases, fumes, and dusts in the air and a small laboratory for those samples that require immediate analysis. The unit generates its own electric power and can thus be set up in places hitherto inaccessible for the study of atmospheric contamination.

During the experimental stage the unit will be located in Kanawha County under the supervision of the state Bureau of Industrial Hygiene. Later,

it will be used for the investigation of atmospheric complaints from county and district health departments. Also in the future plan is installation of meteorological instruments for atmospheric studies.

STATE HEALTH WORKERS X-RAYED

The mass chest x-ray survey of 40,000 New York State employees outside of institutions was begun in mid-January. Mobile x-ray units are set up at various points of employee concentration. The survey is being conducted on a voluntary basis with time off from work allowed employees participating. Each employee receives an individual report of his examination. The survey is being conducted under the supervision of William Siegal, M. D., director of the case finding bureau of the Tuberculosis Control Division with funds provided by the State Health Department. The last previous mass survey of the state employees was done in 1946.

BRAZIL PUBLIC HEALTH ASSOCIATION

At the December meeting of the Brazil Public Health Association (Sociedade Brasileira de Higiene), the following officers were elected for the calendar years 1950–1951:

President: Dr. Geraldo H. de Paula Souza
Vice-President: Dr. Oswaldo Lopes da Costa
Executive-Secretary: Dr. Ernani Ferreira Braga
Treasurer: Engineer Ataulfo Coutinho
Librarian: Dr. Nilson Guimarães
Secretary: Dr. Jose Carlos de Melo Falcão Neto

NEW AMERICAN HEALTH MUSEUM

The American Museum of Health will be reopened early in 1950 in New York on the Hunter College Campus. The Museum began with the Halls of Man and Medical Science of the New York World's Fair in 1939–1940. To the transparent man and other exhibits displayed at the Fair will be added a transparent woman. The Museum, planned to be the largest of its kind, besides the endorsement of New York State and local medical and dental societies, has been endorsed by the schools of public health of Columbia, Harvard, and Johns Hopkins Universities. Basil O'Connor is its president and coöperating is the New York City Board of Higher Education.

TO STEP UP EYE SAVING PROGRAM

At its annual meeting in New York in December, the National Society for the Prevention of Blindness adopted a $500,000 budget for the year 1950. Representing an increase of more than 50 per cent over the 1949 budget, this is to be used for an intensified campaign against preventable blindness. The stepped-up program will be on two major fronts; research and preventive education and service.

It is estimated that more than 20,000 persons will become blind in the United States in 1950. From a half to three-quarters of this blindness could be prevented if existing knowledge were fully used. The President of the Society, Mason H. Bigelow pointed out that less than a million dollars is spent annually on eye research, but more than 50 times that amount in tax funds alone is being spent for the care of the blind. Other action taken by the annual meeting was an increase in the lay membership of the board of directors and of Society committees.

HERBERT BOSCH JOINS WHO

Herbert M. Bosch, chief of the Section of Environmental Sanitation, Minnesota Department of Health, has been appointed to an identical position in the World Health Organization, with headquarters at Geneva, Switzerland. His new work involves directing programs of world-wide scope aimed at international control of the major diseases associated with man's physical surroundings.

Mr. Bosch has been with the Minnesota Department since 1936, with a four year absence on military service, mainly in the European theater. In 1946 he succeeded H. A. Whittaker as director of the Division of Sanitation and when the Department was reorganized in January, 1947, became chief of the newly created Section of Sanitation, including five divisions.

CEREBRAL PALSY REPORTABLE

At the beginning of 1949 cerebral palsy became a reportable disease in New York State in accordance with a section of the Public Health Law passed by the 1949 session of the State Legislature. As of January 1, all physicians were required to report to the full-time health officer having jurisdiction in the area all cerebral palsy patients 18 years of age or over under care and subsequently, must report all new cases regardless of age.

1950 GASTROENTEROLOGY CONTEST

The National Gastroenterological Association has announced its annual cash prize award contest for 1950. One hundred dollars and a Certificate of Merit will be given for the best unpublished contribution on gastroenterology or allied subjects. Contestants living in the United States must be members of the American Medical Association; those in foreign countries must be members of a similar organization in their own country. Entries must be received not later than June 1, 1950. National Gastroenterological Association, 1819 Broadway, New York 23.

RADIOLOGICAL HEALTH BRANCH

The Radiological Health Branch is a new unit of the recently formed Engineering Resources Division of the Public Health Service. Under the direction of Edwin G. Williams, M.D., its purpose is to develop a radiological health program to meet potential health hazards created by increased use of radioactive materials and radiation producing machinery. It will correlate radiological health activities in the Service, develop a training program in radiological health for Service officers and other public health workers, and act as a source of information on radiological health for other units of the Service, for other federal agencies, and for state and local health agencies.

TROPICAL MEDICINE

The American Society of Tropical Medicine, the American Academy of Tropical Medicine, and the National Malaria Society met conjointly in Memphis, Tenn., November 6–9, 1949. The following officers were elected for 1950:

American Society of Tropical Medicine

President-Elect:	Paul F. Russell
Vice-President:	F. J. Brady
Secretary-Treasurer:	Quentine Geiman
Editor:	Mark F. Boyd
Councilors:	Donald Augustine
	George Saunders

American Academy of Tropical Medicine

President:	E. C. Faust
Vice-President:	Fred L. Soper
Secretary:	Clay G. Huff
Treasurer:	H. E. Meleney
Councilors:	Harold W. Brown
	H. H. Anderson

National Malaria Society

President:	Paul F. Russell
President-Elect:	Justin M. Andrews
Vice-President:	W. H. W. Komp
Secretary-Treasurer:	Martin D. Young
Editor:	Fred L. Knowles
Editorial Board Member:	Harry Most
Director:	Lloyd E. Rozeboom

THE ONCOMING FLOOD OF CHILDREN

The National Education Association calls attention to figures of births in the United States that have as much relevance for public health as for education. In 1938 registered live births in the United States totaled 2,286,962, and in 1949, according to preliminary estimates, 3,592,800, an increase of nearly 60 per

cent. During the same period total population increased approximately 10 per cent. These figures highlight the immediate stepped up relative importance of infant, preschool, and school health services and the planning that must go into providing them.

PERSONALS

HARVEY AGNEW, M.D., executive secretary of the Canadian Hospital Council since its inception in 1931 and Editor of "The Canadian Hospital" has resigned to join the hospital consulting firm of Neergaard and Craig, New York City, henceforth to be known as Neergaard, Agnew and Craig. Dr. Agnew is in charge of the newly opened Toronto offices of the firm.

LAMAR E. ALFORD, M.D., has been appointed health officer of the Alexander-Pulaski County Health Department (Ill.) and administrator, Alexander County Tuberculosis Hospital. He was formerly, medical director of the Kern County (Calif.) Tuberculosis Sanatorium.

LILLIAN ANDERSON, M.A.,* has resigned as Director of the Nutrition Bureau, Community Service Society of New York City to move to San Diego, Calif., where she will continue in nutrition work.

JOSEPH D. ARONSON, M.D.,* associate professor of bacteriology, Henry Phipps Institute, Philadelphia, has received the Distinguished Service Award of the Department of the Interior for his studies on the value of BCG vaccination conducted during his 13 year career with the Department's Office of Indian Affairs.

REGINALD M. ATWATER, M.D.,* New York, was recently elected a corresponding member of the Austrian Society of Public Health, Vienna, of which FRITZ REUTER, M.D. is president.

WILLIAM F. BOWER, Purdue University 1949 graduate and U. S. Navy veteran, has been appointed sanitarian, Environmental Sanitation Division, Oregon State Board of Health.

J. HOWARD BRINCKERHOFF, formerly in educational and organizational work for United Service to China, has been appointed field director of United Cerebral Palsy Associations, Inc.

FRANK A. CALDERONE, M.D., M.P.H.,* has resigned as Director of the New York liaison office of the World Health Organization to become Executive Director of the New York City Cancer Committee.

JOSEPH G. CARLING,† recently resigned as Health Education Consultant, Utah State Health Department, to become Executive Secretary of the Utah Tuberculosis Association. WILLIAM R. MANNING, has been appointed as his successor.

CATHERINE CHRISTIANSEN, formerly senior staff nurse, Olympic Health District, Port Angeles, Wash., is now on the staff of the Maryland State Department of Health as generalized public health nursing supervisor in Charles and St. Mary's Counties.

EDWARD J. DVORAK, has been appointed school health consultant for the Minnesota State Department of Health, succeeding THOMAS E. SMITH, who is now teaching health and physical education at Moorhead State Teachers College.

LLOYD D. FELTON, M.D.,* Public Health Service, medical officer in charge of pneumonia studies at National Institutes of Health, retired from the service on December 1.

MARION D. FLOYD, chief dietitian at the Massachusetts General Hospital, has been appointed chief of the Dietetic Branch of the Division of Hospitals, Public Health Service.

F. H. GOLDMAN, Ph.D.,* formerly senior scientist, industrial hygiene division, National Institutes of Health, has been appointed as industrial hygienist with the District of Columbia Health Department.

HYMAN GOLDSTEIN, Ph.D.,† formerly senior statistician, Bureau of Cancer Control, New York State Department of Health, is now statistician with the newly created National Institute of Mental Health of the Public Health Service, Bethesda, Md.

MAJOR GENERAL MALCOLM C. GROW, Surgeon General of the U. S. Air Force has retired after more than 31 years of military medical service. He is succeeded by MAJOR GENERAL HARRY G. ARMSTRONG, Deputy Surgeon General who is in turn succeeded by BRIGADIER GENERAL DAN CLARK OGLE, special assistant to the Surgeon General.

ERNEST M. GRUENBERG, M.D.,† who has been Assistant in the Department of Psychiatry and Mental Hygiene and the Department of Public Health at Yale University, New Haven, Conn., has been appointed Executive Secretary of the New York State Mental Health Commission created by the 1949 State Legislature. The functions of the Commission are to coördinate a long-range mental hygiene program with existing and projected community health services.

MILES J. O. GUILLINGSRUD, M.D., has been appointed District Health Officer of the Baker-Union District Department of Health with headquarters at La Grande, Ore.

ROBERT M. HALL, M.D., has been appointed secretary of the American Medical Association's Council on National Emergency Medical Service with headquarters in Chicago.

ALICE HAMILTON, M.D.,* first woman member of the faculty of Harvard University, received the Fiftieth Anniversary Award of the National Consumers League, at the League's anniversary dinner held recently at the Commodore Hotel, New York City.

CHARLES C. HEDGES, M.D., recently connected with the Yuma General Hospital, Yuma, Ariz., has resigned to become Chief Medical Officer of the Navajo Indian Reservation, Window Rock, Ariz.

MARGARET A. HOCKENBERGER, R.N., previously maternal and child health nursing consultant, Oregon State Board of Health, is now pediatrics supervisor, Rochester General Hospital, Rochester, N. Y.

FRANK E. HOECKER, M.D., formerly consultant to the Division of Industrial Hygiene, U. S. Public Health Service, is now an associate professor of physics at the University of Kansas in charge of a research project for the U. S. Navy.

JOSEPH C. KNOX, associate sanitary engineer of the Massachusetts Department of Public Health, was recently appointed secretary to the New England Interstate Water Pollution Control Commission, with headquarters in Boston.

ROBERT S. KRUEGER, working on industrial vision control programs since 1945 with the American Optical Company, has been made director of Industrial Service, National Society for the Prevention of Blindness, New York City.

PAUL V. LEMKAU, M.D.,† associate professor of Health Administration at The Johns Hopkins University, has been appointed chief of the Division of Mental Hygiene, Maryland State Department of Health, succeeding KENNETH B. JONES, M.D., who resigned to become Superintendent at the District of Columbia Training School for the Feebleminded.

JERMYN F. MCCAHAN, M.D., since 1941 medical director of Bausch & Lomb Optical Company, Rochester, N. Y., is now assistant to the director, Council of Industrial Health, American Medical Association, with headquarters in Chicago.

AUDREY JANE MCDONALD, M.D., was recently appointed Assistant Health Officer, Montgomery Co., Maryland, succeeding MARY P. WARNER, M.D., resigned.

JONATHAN C. MEAKINS, M.D., formerly professor of Medicine at McGill University and physician-in-chief of the Royal Victoria Hospital, Montreal, became editor of the American Heart Journal, on January 1.

ELEANOR W. MOLE, is the new executive director of the Visiting Nurse Association of Brooklyn, N. Y., succeeding MARIE M. KNOWLES, retired.

EMIL O. MUHS, M.D., until recently in private practice at Greeley, Colo., is now Benton County, Ore., Health Officer.

J. ARTHUR MYERS, M.D.,* professor of internal medicine, preventive medicine and public health at the University of Minnesota and past president of the National Tuberculosis Association, Mississippi Valley Conference on Tuberculosis, Minnesota Public Health Association and the American College of Chest Physicians, recently received a plaque for distinguished service in tuberculosis control at the annual Christmas Seal dinner of the Minnesota Public Health Association on the occasion of publication of his latest book "Invited and Conquered," a history of tuberculosis in Minnesota.

ERWIN E. NELSON, M.D., has been appointed Medical Director of the U. S. Food and Drug Administration, succeeding ROBERT P. STORMONT, M.D., who has resigned to become Secretary of the Council on Pharmacy and Chemistry of the American Medical Association, Chicago.

ILEANA INES JOHANNSEN OEHRENS, assistant in the School of Health Library, University of Chile, South America, is among the recipients of the Medical Library Association scholarships for 1950.

MARY C. PANGBORN, M.D., senior biochemist of the Division of Laboratories and Research, New York State Department of Health, recently received the highest of six Harold J. Fisher Memorial Awards for 1949, offered to state employees for outstanding and distinguished service in state government by the Civil Service Leader, in honor of the former president of the Civil Service Employees Association, Harold J. Fisher.

WILLIAM A. POWELL, M.D., for the past 17 years Health Officer of Contra Costa County, Calif., retired December 1, 1949.

HERBERT A. RATNER, M.D.,† formerly director of student health and associate professor of public health at Loyola University School of Medicine, is the new Health Commissioner of Oak Park, Ill.

NORMAN J. ROSE, M.D.,* formerly health officer for the State District No. 16 in Highland, has been appointed assistant chief,

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* Fellow A.P.H.A.
† Member A.P.H.A.

Division of Tuberculosis Control, Illinois State Department of Public Health.

FRANCES C. ROTHERT, M.D.,* director of the division of maternal and child health, Arkansas State Board of Health and vice-chairman, Section of Maternal and Child Health, American Public Health Association, was made president-elect of the National Association of Maternal and Child Health and Cripp'ed Children's Directors at its recent annual meeting in New York.

H. H. SCHRENK, PH.D.,* has resigned as chief of the environmental investigation branch of the Industrial Hygiene Division of the Public Health Service to become director of research of the Industrial Hygiene Foundation, Mellon Institute, Pittsburgh. His successor is LEWIS J. CRALLEY, PH.D.,* who has been chief of the coöperative health services branch of the Division.

DANIEL L. SECKINGER, M.D., DR.P.H.,* former assistant health officer and coördinator of health and hospitals, has been appointed Health Officer of Washington, D. C., succeeding GEORGE C. RUHLAND, M.D.,* retired.

JOHN W. SPIES, M.D., M.P.H.,* formerly director of the Communicable Disease and Cancer Control Divisions of the Delaware State Health Department, has been appointed Health Officer of Utah. Dr. Spies received the M.D. degree from the Harvard Medical School and the M.P.H. degree from the Johns Hopkins School of Public Health.

CLARENCE I. STERLING, JR.,† formerly director of the Health and Sanitation Division of the Institute of Inter-American Affairs, Washington, D. C., has succeeded ARTHUR D. WESTON * as chief sanitary engineer and deputy commissioner of the Massachusetts Department of Public Health who has retired after 40 years of service.

HARVEY TAYLOR, has been appointed engineer in charge of water pollution control for the Montana State Board of Health.

GERTRUDE TOUCHTON, formerly tuberculosis consultant with the Visiting Nurse Association, New Haven, Conn., is now public health nursing advisor, Tuberculosis Nursing, Maryland State Department of Health.

PETER VALAER, formerly industrial hygienist, District of Columbia Health Department, is now with the Division of Industrial Hygiene, U. S. Public Health Service.

E. L. WITTENBORN,† has been appointed chief of the division of public health education, Illinois State Department of Public Health, succeeding MARGARET B. COWDIN,† who has returned to her position as executive secretary of the Illinois Statewide Public Health Committee.

HELEN WOLFF, M.D., has succeeded B. O. MORK, M.D.,† as director of District 5 with headquarters in Worthington, of the Minnesota Department of Health, the first woman to be appointed a district health officer in the state. Dr. Mork is now working for an advanced degree in public health at the University of Minnesota.

PRESTON E. WRIGHT, M.D.,† formerly health officer successively of several Oklahoma counties, has been appointed health officer of the four-county health department comprising Massac, Johnson, Pope, and Hardin counties of Illinois.

ALASKA TERRITORIAL HEALTH DEPARTMENT:

WILLIAM E. BAIRD, D.D.S., public health dentist, has been assigned to the M/S Hygiene.

AIRLIE C. BRUCE, public health nurse has been assigned to the Anchorage office.

DUNCAN C. CHALMERS, M.D.,† assistant commissioner of health and director of the Communicable and Preventable Disease Control Division, resigned to become medical officer in charge of the Alaska Native Service Hospital at Bethel.

VIRGINIA C. COBB, M.D., pediatric consultant, has been appointed in charge of the rheumatic fever program.

RITA DINGMAN, formerly public health nurse, for Catholic Charities, Alton, Ill., has been assigned to Valdez.

VIRGINIA IRWIN, is public health nurse, assigned to Fairbanks.

FRANCIS E. KESTER,† formerly of National Office of Vital Statistics, has been appointed director of the Bureau of Vital Statistics.

ELLA MUIR, who served in the Army Nurse Corps during the last war, is public health nurse, stationed at Sitka.

CATHERINE SHERWOOD, M.D.,† director of the Maternal and Child Health and Crippled Children's Services, has resigned to return to California.

SARAH JANE SINCLAIR, pediatric nurse, has been assigned to the rheumatic fever unit in Juneau.

JOSEPH W. STICKLER, M.D.,† Epidemiologist, formerly with the U. S. Bureau of Indian Affairs, will make field investigations of communicable disease outbreaks and establish and interpret public health regulations.

CALIFORNIA, UNIVERSITY OF

The following sanitarians, all graduates in sanitation of the School of Public Health of the University of California, were recently

* Fellow A.P.H.A.
† Member A.P.H.A.

added to the staff of health departments in California:

Alameda County Health Department—EDUARDO BONDOLFI, LESTER A. MEIS
Oakland City Health Department—ELI GLOGOW, JORDAN HIROTZKA
Contra Costa County Health Department—HENRY M. RUBIN

DEATHS

ROBERT MCD. ALLEN,† President, Vitamin Food Co., Newark, N. J. (Food and Nutrition Section).

GEORGE E. ATWOOD, M.D., D.P.H.,† Commissioner of Health, Ware County (Georgia) Board of Health, died September 30, 1949. (Health Officers Section).

JOHN N. BUCKER, D.V.M.,† died December 15. (Epidemiology Section).

JOHN A. CONWAY, M.D.,* died July 28, 1949 at the age of 75. (Health Officers Section).

A. BARKLIE COULTER, M.D.* Director, Bureau of Tuberculosis, District of Columbia Health Department, died December 7, 1949. (Medical Care Section).

DON W. DYKSTRA, M.D., city health officer of North Little Rock, Ark., was killed December 31 in a crash of his private plane.

ALEXANDER FLEISHER, PH.D.,* Acting Deputy Chief, Labor Div., USACA Section, U. S. Forces in Austria, (Public Health Education Section).

ARTHUR A. FLEISHER,† Honorary President, Jewish Hospital Association of Philadelphia. (Medical Care Section).

EDWARD J. GODFREY, M.D., M.P.H.,* City Health Officer, Waterbury (Conn.), died July 2, 1949. (Health Officers Section).

RAYMOND F. GOUDEY,* (Engineering Section).

SAMUEL REESE HAYTHORN, M.D., formerly head of the Department of Pathology and Bacteriology at the University of Pittsburgh, died December 6 at the age of 69.

LT. COL. A. PARKER HITCHENS, M.C. (M.D.)* director of Bureau of Laboratories, Pennsylvania State Department of Health, died December 10, after a long illness. (Laboratory Section).

JAMES SPENCER HOUGH, M.D.,* Acting Director, Bureau of Maternal & Child Health, Alabama State Department of Health, died November 10, 1949. (Health Officers Section).

TIPTON M. JOLLIFFE, M.D.,* died October 7. (Maternal and Child Health Section).

WILLIAM I. KLEIN, of East Orange, N. J., international authority on water purification and sewage disposal systems, died November 30, 1949.

ALFRED J. LOTKA, M.A., D.Sc.,* retired assistant statistician of the Metropolitan Life Insurance Co., New York City, died December 5, 1949. (Statistics Section).

MICHAEL J. MCCORMACK, sanitarian in the Milk and Restaurant Sanitation Section, of the Bureau of Environmental Sanitation, New York State Department of Health, died November 27.

RITA A. NIELSEN, R.N.,† superintendent of nurses, Winfield Hospital, Winfield, Ill., died November 15. (Public Health Nursing Section).

LLOYD NOLAND, M.D.,* superintendent, Department of Health, Tennessee Coal, Iron and Railroad Company, Employees' Hospital, Fairfield, Alabama, died November 27. (Industrial Hygiene Section).

BUDD H. OBERT,* retired, died July 7, 1949. (Health Officers Section).

JOHN B. SETZLER, M.D.,† Director, Spartanburg (South Carolina) County Health Department, died November 9, 1949. (Health Officers Section).

WILBERT S. SLEMMONS,† Chief Chemist, Carnation Company, Oconomowoc, Wisconsin. (Laboratory Section).

FRANKLIN D. STEWART, C.E.,† assistant chief engineer, Ohio State Department of Health, died March 10, 1949. (Engineering Section).

GEORGE CORNELL SUPPLEE, owner and director of the G. C. Supplee Laboratories, Bainbridge, N. Y., died November 7, 1949.

WILLIAM C. WOODWARD, M.D.,* died December 22, 1949. (Unaffiliated).

CONFERENCES AND DATES

American Association of Registration Executives. Washington, D. C. April 23.

American Pharmaceutical Association. Atlantic City, N. J. Week of April 30.

American Water Works Association. Annual Meeting, Philadelphia, Pa. May 21–26.

Child Study Association of America. Annual Conference, New York, N. Y. February 27.

Council of the Public Health Conference on Records and Statistics. Washington, D. C. February 16–17 and April 22.

Illinois Public Health Association. Leland Hotel, Springfield, Ill. April 20–21.

International and Fourth American Congress on Obstetrics and Gynecology. Hotel Statler, New York, N. Y. May 14–19.

Kansas Public Health Association. Continental Hotel, Kansas City, Mo. Joint meeting with Missouri Public Health Assn. April 24–26.

* Fellow A.P.H.A.
† Member A.P.H.A.

National Conference of Social Work. Atlantic City, N. J. April 23–29.
National Foundation for Infantile Paralysis. New York, N. Y. March 16–22.
Natonal Health Council. Annual Meeting. New York, N. Y. March 24.
National Negro Health Week. April 2–9.
National Organization for Public Health Nursing. Biennial Meeting. San Francisco, Calif. May 5–12.
National Society for the Prevention of Blindness. Annual Conference (held in conjunction with interim meeting of Pan American Association of Ophthalmology). Miami Beach, Fla. March 26–30.
National Tuberculosis Association. Annual Meeting. Washington, D. C. April 24–28.
National Urban League. Annual Meeting. New York, N. Y. February 15.
New Mexico Public Health Association. Raton, N. M. May 16–19.
New York State Health Conference. Lake Placid, N. Y. June 5–8.
Public Health Conference on Records and Statistics. Washington, D. C. April 24–27.
Puerto Rico Public Health Association. School of Tropical Medicine, San Juan, P. R. February 8–11.
Texas Public Health Association. Galveston. February 19–22.
United States-Mexico Border Public Health Association. City of Chihuaua, Mexico. April 12–14.
Southern Branch, American Public Health Association. Birmingham, Ala. April 27–29.
Western Branch, American Public Health Association. Portland, Ore. May 30–June 1.

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